

# **Biological Discipline Report**

Wetland Delineation, Mitigation, and Floodplain Habitat Assessment

NE 40<sup>th</sup> Street Stormwater Trunk Line Extension City of Redmond, Washington

for City of Redmond

November 18, 2016



1101 South Fawcett Avenue, Suite 200 Tacoma, Washington 98402 253.383.4940

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# NE 40<sup>th</sup> Street Stormwater Trunk Line Extension City of Redmond, Washington

File No. 0500-211-00

November 18, 2016

Prepared for:

City of Redmond 15670 NE 85<sup>th</sup> Street Redmond, Washington 98073

Attention: Steve Hitch

Prepared by:

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DBC:JOC:cam

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## **INTRODUCTION**

This Biological Discipline Report has been prepared by GeoEngineers, Inc. (GeoEngineers) on behalf of the City of Redmond (City) to address environmental permitting requirements for the NE 40<sup>th</sup> Street Stormwater Trunk Line Extension project (project). The project involves new stormwater utility installation along NE 40<sup>th</sup> Street, between 172<sup>nd</sup> Avenue NE and Lake Sammamish. This report addresses baseline habitat conditions for biological resources, including: City-regulated critical areas, such as wetlands and fish & wildlife habitat conservation areas; FEMA-identified flood zones, aquatic habitats regulated under the jurisdictions of the City of Redmond Zoning Code; and species and critical habitats listed under the Endangered Species Act (ESA).

This report will describe the project design, including impacts to baseline habitat conditions and mitigation rationale. Discussion of the regulated floodplain will fulfill the requirements of a floodplain habitat assessment. This report is intended to fulfill regulatory requirements in support of permit applications to City Planning and Community Development, Washington State Department of Fish & Wildlife (WDFW) and potentially the U.S. Army Corps of Engineers (USACE).

#### PROJECT DESCRIPTION

The project is located within the City of Redmond, near the northwest corner of Lake Sammamish (Figure 1, Vicinity Map). Preliminary design drawings developed by Coughlin Porter Lundeen (CPL) are included in Appendix A. The project will benefit local stormwater flow conditions, reducing peak flow volume and velocity at the system's existing outfall. Some water quality improvements are proposed as part of the construction plans, although the exact design and specifications of these features are not fully developed at this time. It is expected that this project will be designed and implemented to meet and receive certification as a "Salmonsafe" infrastructure development project.

# **Project Location**

The project is located along NE 40<sup>th</sup> Street, between 172<sup>nd</sup> Avenue and Lake Sammamish. The new outfall is proposed just beyond the terminus of NE 40<sup>th</sup> Street, within City-owned right-of-way (ROW). The current outfall exists to the northwest, at Villa Marina Creek. The project will span portions of Sections 24 and 13, Township 25N and Range 05E.

# **Purpose and Need**

The project is needed to improve local stormwater conveyance and reduce peak flow velocity and volume at the existing outfall. Villa marina Creek currently receives high flows during peak stormwater events and has experienced erosion in the lower segment of the Creek. This project is needed to reduce high flows, but maintain baseflows in Villa Marina Creek.

## **BASELINE CONDITIONS**

#### **Landscape Context**

The proposed trunk line runs perpendicular to the west shore of Lake Sammamish, through areas zoned for multi-family urban development (along the outfall) and single family urban development (above



West Lake Sammamish Parkway). The project will be limited to the City roadway ROW, which is surrounded by dense residential development. There are no streams within the proposed trunk line footprint. The outfall location, beyond the terminus of NE 40<sup>th</sup> Street, is the only portion of the project not covered by impervious surfaces. This area is lined by red alder (*Alnus rubra*) trees on the south side, and until recent clearing efforts, was dominated by dense Himalayan blackberry (*Rubus armeniacus*) and reed canarygrass (Phalaris arundinacea). Some native vegetation such as hardstem bulrush (*Scirpus acutus*) does exist along the lakeshore.

#### Wetlands

The USFWS National Wetlands Inventory (NWI) does not map wetlands in the project vicinity, excluding Lake Sammamish (USFWS 2016a). No nearby wetlands are mapped by the King County iMap (2016) online geographic information system (GIS). The WDFW Priority Habitats and Species (PHS) database does not depict wetlands at the project location (WDFW 2016a). The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey shows Kitsap silt loam, 2 to 8 percent slopes throughout the project area (USDA-NRCS 2016a). This moderately well drained soil type is not considered hydric but may contain hydric components in depressions and drainage ways (USDA-NRCS 2016b). Printouts from these data sources are included in Appendix B, Printouts from Public Agency Databases.

GeoEngineers biologists completed a site visit on August 4, 2016, to document outfall location conditions and to delineate additional wetland habitat in the vicinity of the proposed stormwater outfall to Lake Sammamish. The trunk line route down NE 40<sup>th</sup> Street was also visually assessed to confirm the lack of wetlands directly adjacent to the roadway that could be impacted during construction.

There are no wetlands within, or immediately adjacent to, the road construction limits. Wetlands that may be impacted by the project are limited to the lake-fringe wetland along the Lake Sammamish shoreline.

#### **Lake Fringe Wetland**

A review of USGS water level data (USGS 2016) showed the water surface elevation of Lake Sammamish to fluctuate approximately 2 to 3 feet throughout the year. This hydrologic cycle supports wetland habitat along the unarmored shoreline within and along the City ROW. The wetland was recently mowed to near the water's edge, and appeared to previously be dominated by Himalayan blackberry and reed canarygrass. Scattered native vegetation observed included hardstem bulrush (Scirpus acutus) and pacific willow (Salix lucida).

The boundary of the wetland (Wetland A) within the City ROW is shown in Figure 2. Wetland A continues offsite to both the north and south of the site. The upland boundary on site was delineated along a topographic break with upland soils documented above and wetland soils below. Sample plot data sheets have been included in Appendix C.

The wetland was rated using to the Washington Ecology 2014 rating system, as required by Redmond Zoning Code (RZC) 21.64.030. It was identified as a category II lake-fringe wetland, requiring a 110-foot-buffer. The wetland rating form, including all required attachments, is included in Appendix D. Table 1, below, summarizes conditions within this wetland.



# **TABLE 1. LAKE FRINGE WETLAND SUMMARY**

General Information					
Rating	II (20 points) <sup>1</sup>				
Buffer Width	110 feet <sup>2</sup>				
Cowardin Class	Lake-Fringe Wetland				
HGM Class	Lake-Fringe Wetland				
Description Summary					
Vegetation	Herbaceous: Hardstem bulrush (Scirpus actuus), reed canarygrass (Phalaris arundinacea)  Shrub: Sitka willow (Salix sitchensis)				
Soils	<u>Tree</u> : Black cottonwood ( <i>Populus balsamifera</i> ), red alder ( <i>Alnus rubra</i> )  F6 – Redox Dark Surface				
Hydrology	Indicators: High water table, geomorphic position Source: Lake Sammamish, surface runoff, direct precipitation				
Notes	Well-defined topographic break at wetland boundary. Rooted aquatic vegetation extends approximately 20 feet into water (observed August 2016).				
Rating Functions Summary (20 points total)					
Water Quality	<b>8 points</b> : Due to presence of pollutants and herbaceous vegetation throughout much of the wetland.				
Hydrologic	<b>7 points</b> : Due to exposed nature of the site to wind energy, presence of high-horsepower boat traffic, and human structures near the wetland potentially vulnerable to erosion.				
Habitat	<b>5 points</b> : Due to dense development and minimal accessible habitat or undisturbed areas nearby.				
Buffer Condition	Minimal wetland buffer exists. Multi-family residences border the wetland to the north and south, while City ROW containing $40^{\rm th}$ Street exists to the west.				

#### Notes

# **Fish & Wildlife Habitat Conservation Areas**

#### **Streams**

The Washington Department of Natural Resources (WDNR) Forest Practices Application and Review System (FPARS) nor any other public source map a stream at the proposed outfall location (WDNR 2016a). The current stormwater outfall occurs in Villa Marina Creek to the north, a mapped Type-F stream. WDFW SalmonScape online maps show the Villa Marina Creek potentially supporting Chinook (Oncorhynchus tshawytscha), sockeye (Oncorhynchus nerka), and coho salmon (Oncorhynchus kisutch), as well as steelhead trout (Oncorhynchus mykiss). WDFW PHS maps do not show the Villa Marina outfall channel. Printouts from these data sources are included in Appendix B.



 $<sup>^{1}</sup>$  Wetland rating in accordance with Washington State Wetlands Rating System for Western Washington (Hruby, revised 2014).

<sup>&</sup>lt;sup>2</sup> Redmond Zoning Code 21.64.030 B, assuming moderate land use for a Category II wetland with moderate habitat function score. Final buffer width subject to jurisdictional approval.

The current stormwater outfall to the Villa Marina Channel occurs west of the natural channel. The channel downstream to Lake Sammamish is straight and highly entrenched, apparently due to scour from high velocity storm flows. During a site visit in September 2016, following a period of very little rainfall, low flow conditions were observed through this system. Further assessment of this area was not conducted since there is no planned project work in this area.

#### Wildlife Habitat

Wildlife habitat at or adjacent to the project area is limited by dense residential development. Besides the proposed outfall structure, all of the project work will occur beneath the paved surface of NE 40<sup>th</sup> Street. At the undeveloped outfall location, invasive species dominate the upper wetland and wetland buffer. This zone is approximately 100 feet long from pavement to the water's edge, and the right of way is 30 feet wide. The area is located between two multi-family residential structures, each of which includes overwater docks and boat moorage facilities. Lake Sammamish, the receiving body of this proposed stormwater conveyance, provides habitat for a variety of fish and wildlife species.

To address the potential for Fish and Wildlife Habitat Conservation Areas (FWHCAs) regulated under RMC 20D.140.20 to occur in the vicinity of the project and/or be affected by the project, we reviewed the following data sources, with relevant maps and printouts included in Appendix B:

- Priority Habitats and Species (WDFW 2016a)
- Washington Natural Heritage Program (WDNR 2016b)
- Redmond FWHCAs map:

The City FWHCA map does not show the proposed outfall location as a core preservation area.

Species and habitats regulated under PCC 18E.40.020 that could potentially occur within or near the project area include:

Chinook, coho, and sockeye Salmon and steelhead Trout. These species are known to occupy Lake Sammamish.

## **FLOODPLAIN HABITAT ASSESSMENT**

# **Regulated Floodway**

FEMA floodplain maps show zone "AE" extending well above the lake OHWM at the project site (Figure 2). The design of this project places the proposed outfall structure within this area. Furthermore, as this project is located within 150' from the lake edge, it is located within the Protected Area Riparian Buffer Zone (RBZ). As such, the project has been designed to inherently avoid detrimental impacts without utilizing compensatory mitigation. Specific to potential flooding implications, this project will:

- Not increase base flood elevation. The outfall will be located within a settling basin approximately 6 feet below the current ground surface while no other permanent above-ground structures are proposed.
- Improve storm water quality entering the lake by adding upstream water quality treatment and reducing peak flows at the nearby Villa Marina outfall channel.



- Improve riparian vegetation within the floodway by utilizing live stake plantings as a flow velocity treatment.
- Improve habitat value of the area by replacing invasive vegetation (Himalayan blackberry) with native willows.

Indirect effects of this project will likely be beneficial, as reduced peak flows improve habitat quality in the Villa Marina outfall channel, which is accessible to fish species. The project will also improve wetland and lake shore habitat by replacing invasive species with native wetland shrubs.

## **Federally Listed Threatened and Endangered Species**

GeoEngineers reviewed federal lists for species listed as Threatened or Endangered and habitats designated as Critical Habitat under the ESA. Based on the following information, the project will have **no effect** on federally listed species and critical habitats.

An official species list was queried from the USFWS IPaC system (USFWS 2016b), included in Appendix B. This system maps potential threatened and endangered species based on project location. Listed fish species managed by the National Marine Fisheries Service (NMFS 2016; Appendix B) were also checked and none are expected to occur within the project area. The following species were identified by USFWS as potentially occurring in the project vicinity.

- Marbled Murrelet (Brachyramphus marmoratus). Marbled murrelet foraging occurs in the marine waters of King County and nesting occurs in old growth and mature forests. There is no nearby designated critical habitat for marbled murrelet. There are no old growth or mature forests within the project vicinity suitable for nesting by this species.
- Yellow-billed Cuckoo (Coccyzus americanus). Yellow-billed cuckoos are not reported nor expected to occur in the action area. Washington is near the northern limit of this species' historic range and WDFW only recognizes four sightings in Western Washington between 1950 and 2000. While this species is listed as potentially occurring in King County, its presence within the site vicinity is considered highly unlikely.
- Streaked Horned Lark (Eremophila alpestris strigata). Streaked horned larks are not reported nor expected to occur in the action area. Historic breeding areas are mapped in King County; however, known populations in Washington are restricted to a few large open grassland sites around south Puget Sound and the Pacific coast. While this species is listed as potentially occurring in King County, its presence within the site vicinity is considered highly unlikely.
- North American Wolverine (Gulo gulo luscus). This species requires areas that are cold and receive enough winter precipitation to reliably maintain deep persistent snow late into the warm season. The Puget Sound lowlands does not provide this habitat and as such their presence within the project vicinity is considered highly unlikely.
- Puget Sound Chinook Salmon (Oncorhynchus tshawytcha). Puget Sound Chinook Salmon are known to occupy Lake Sammamish. The design of this project avoids in-water work and therefore will have no effect on aquatic species.



- Puget Sound Steelhead Trout (Oncorhynchus mykiss). Puget Sound Steelhead Trout are known to occupy Lake Sammamish. The design of this project avoids in-water work and therefore will have no effect on aquatic species.
- Bull Trout (Salvelinus confluentus). Bull Trout are mapped by the USFWS as potentially occurring in King County. Their presence within Lake Sammamish is not expected, and project design has avoided in-water work.

Habitat conditions, and location of project elements preclude these species from the site. While these species are listed as potentially occurring in the project vicinity, none are expected to be present within the work area or otherwise impacted by the project. There are no direct impacts to wetland and lake habitat as a result of the project. Reduced storm flow velocities will reduce scour in Villa Marina Creek, improving accessible habitat quality for listed species. The project will therefore have no effect on listed species identified in this letter.

#### **IMPACT ASSESSMENT**

The majority of this project will occur beneath the paved surface of NE 40<sup>th</sup> Street. The only excavation in previously undisturbed soils will occur around the outfall structure, near the shores of Lake Sammamish. Approximately 600 square feet will be excavated for the settling basin, and an additional roughly 100 square feet will be excavated/graded for the wetland mitigation/connection area. No excavation or other development within the currently existing wetland is proposed. The project will cause a net increase in wetland function as the site is converted from its previous state, dominated by invasive species.

Formal grading and planting plans will be finalized as project design progresses. We expect that aquatic shrubs capable of surviving in 1-2 feet of water, such as willow and dogwood, will be planted near the right of way center. As the grading transitions to shallower and eventually only-saturated areas, emergent species will be incorporated into the planting plan. This concept is outlined in 30 percent design drawings, included in Appendix A.

#### **SUMMARY AND CONCLUSIONS**

The project has been designed to avoid and minimize impacts to the wetland and lake habitats to the greatest extent feasible. No excavation or other direct impact will occur in these areas. The project has been designed to slow water velocities and avoid scour or other degradation to the nearshore environment. Potential flooding impacts are negated by increasing the storage capacity at the outfall site and reducing peak storm flows at the Villa Marina outfall channel. This creek is accessible to fish and wildlife species, resulting in a net increase of potential ESA-listed species habitat quality. Revegetation of the shoreline buffer with native species will enhance wetland habitat and increase the local cover of native species. The project will also reduce peak flow velocity in the current outfall location and have a net benefit on instream habitat in Villa Marina Creek.

## **REFERENCES**

Hruby, T. 2014. Washington State Wetland Rating System for Western Washington: 2014 Update. Publication #14-06-029. Olympia, WA: Washington Department of Ecology.

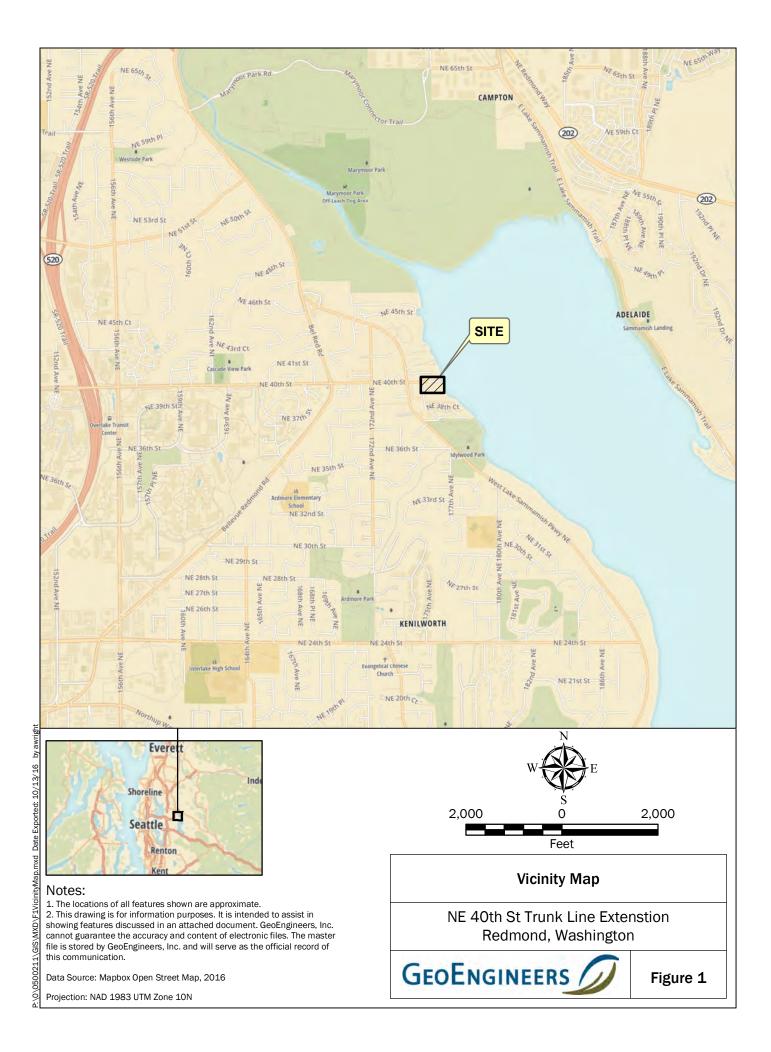


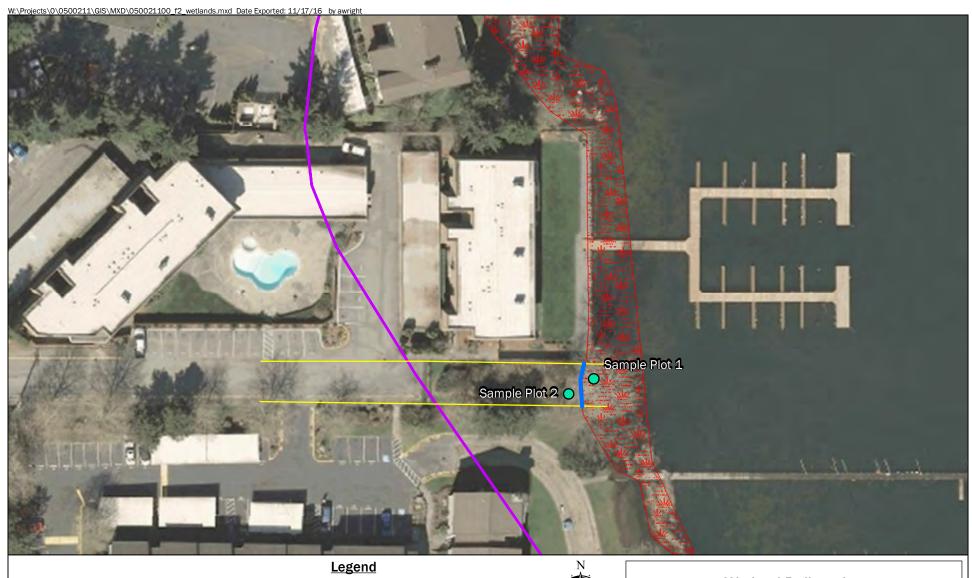
- National Marine Fisheries Service. 2016. Status of ESA Listings & Critical Habitat Designations for West Coast Salmon & Steelhead. Updated July 2016. Available at:

  <a href="http://www.westcoast.fisheries.noaa.gov/protected-species/species-list/species-lists.html">http://www.westcoast.fisheries.noaa.gov/protected-species-list/species-lists.html</a>.
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- Washington State Department of Fish & Wildlife. 2016a. Priority Habitats and Species (PHS) on the Web. Available at <a href="http://wdfw.wa.gov/mapping/phs/">http://wdfw.wa.gov/mapping/phs/</a>.
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- Washington State Department of Natural Resources. 2016b. Natural Heritage Program: Species Lists. Available at: <a href="http://www.dnr.wa.gov/NHPlists">http://www.dnr.wa.gov/NHPlists</a>.







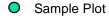


# Notes:

- 1. The locations of all features shown are approximate.
- 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Aerial image from ESRI Data Online. FEMA FIRM. Project Survey.

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet



Delienated Wetland Boundary

City Right of Way (Approximate)

Flood Hazard Boundary

Wetland A (Approximate)

# 20 0 20 Feet

# **Wetland Delineation**

NE 40th St Trunk Line Extension Redmond, Washington

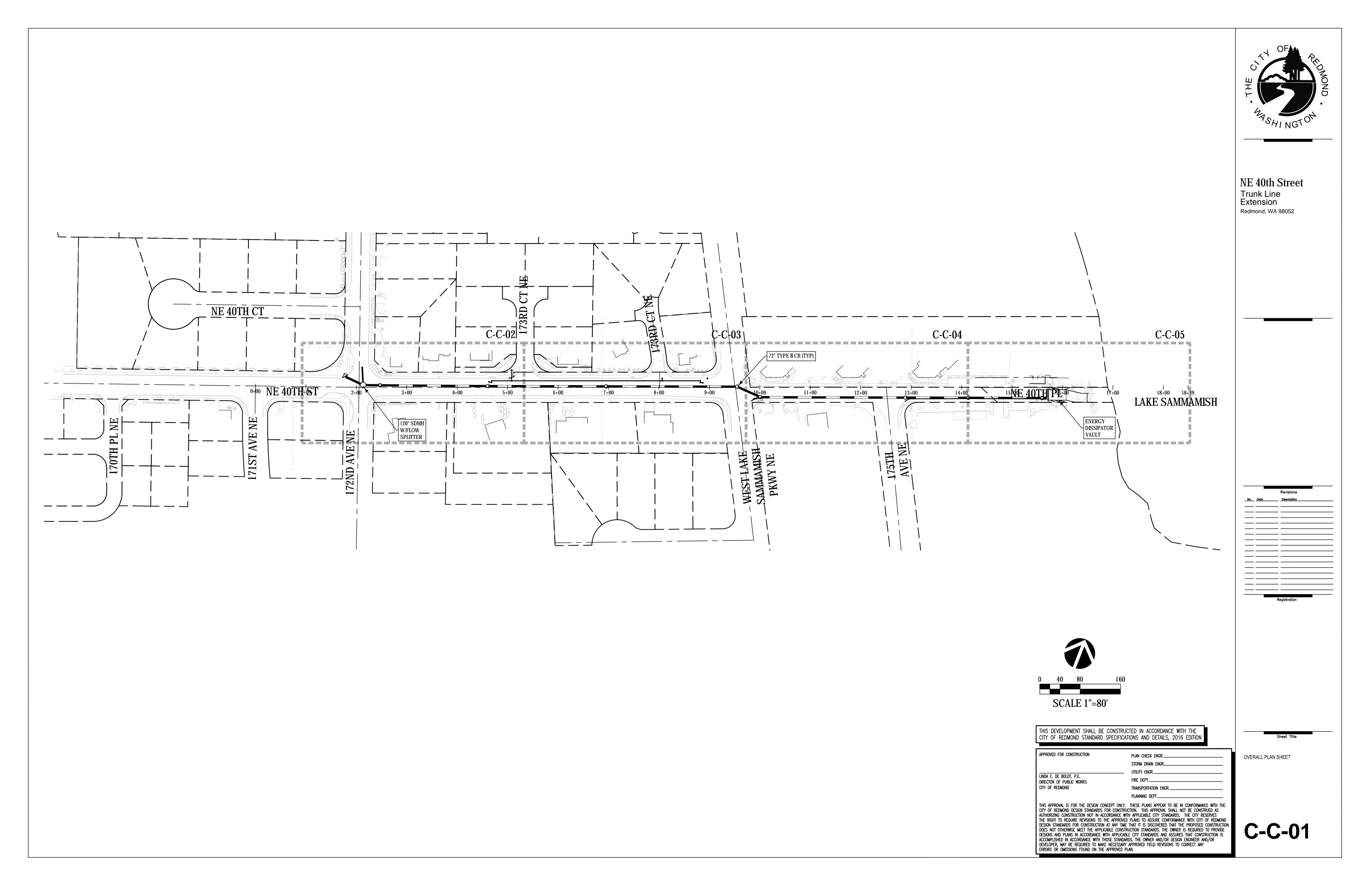


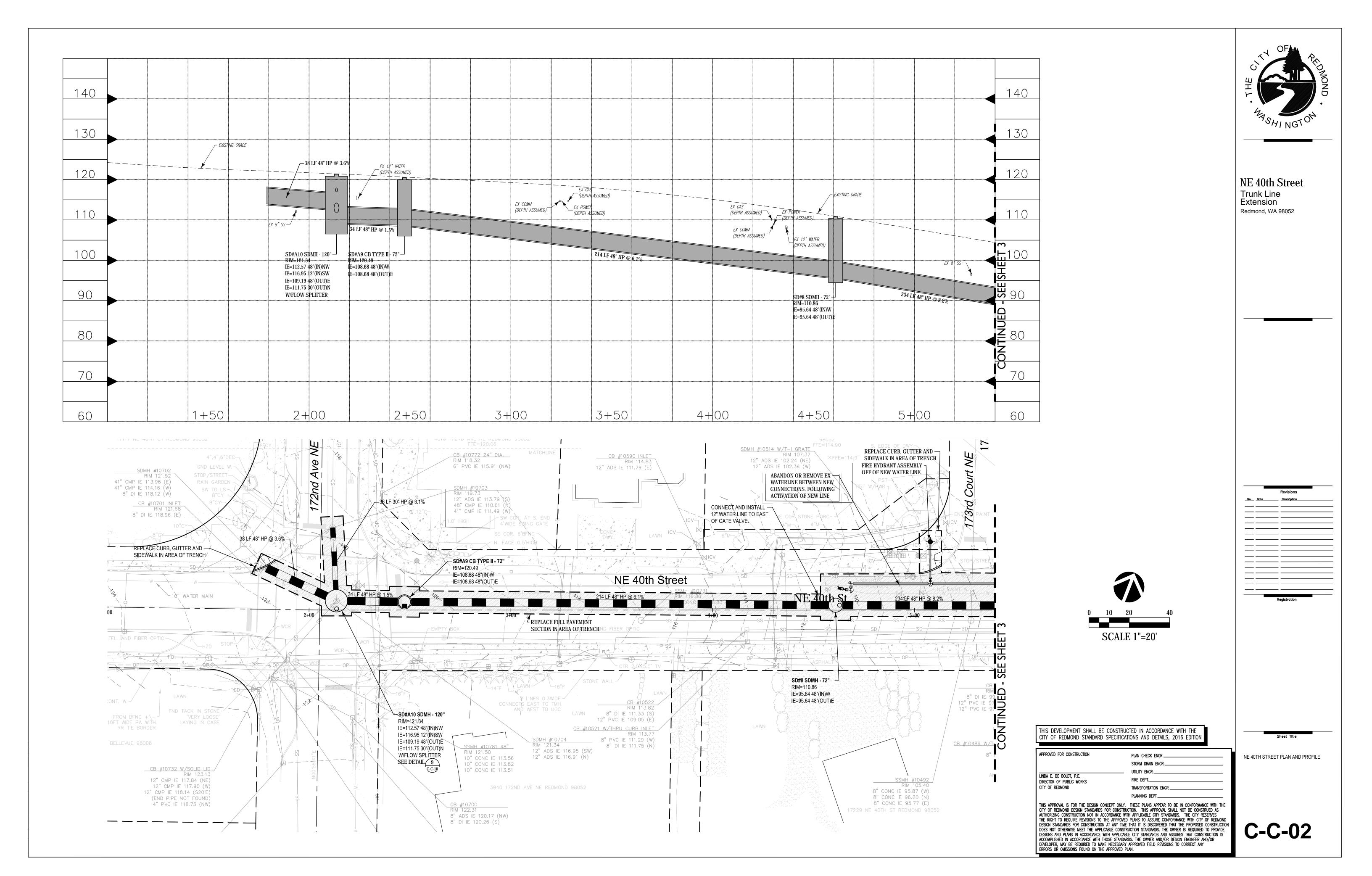
Figure 2

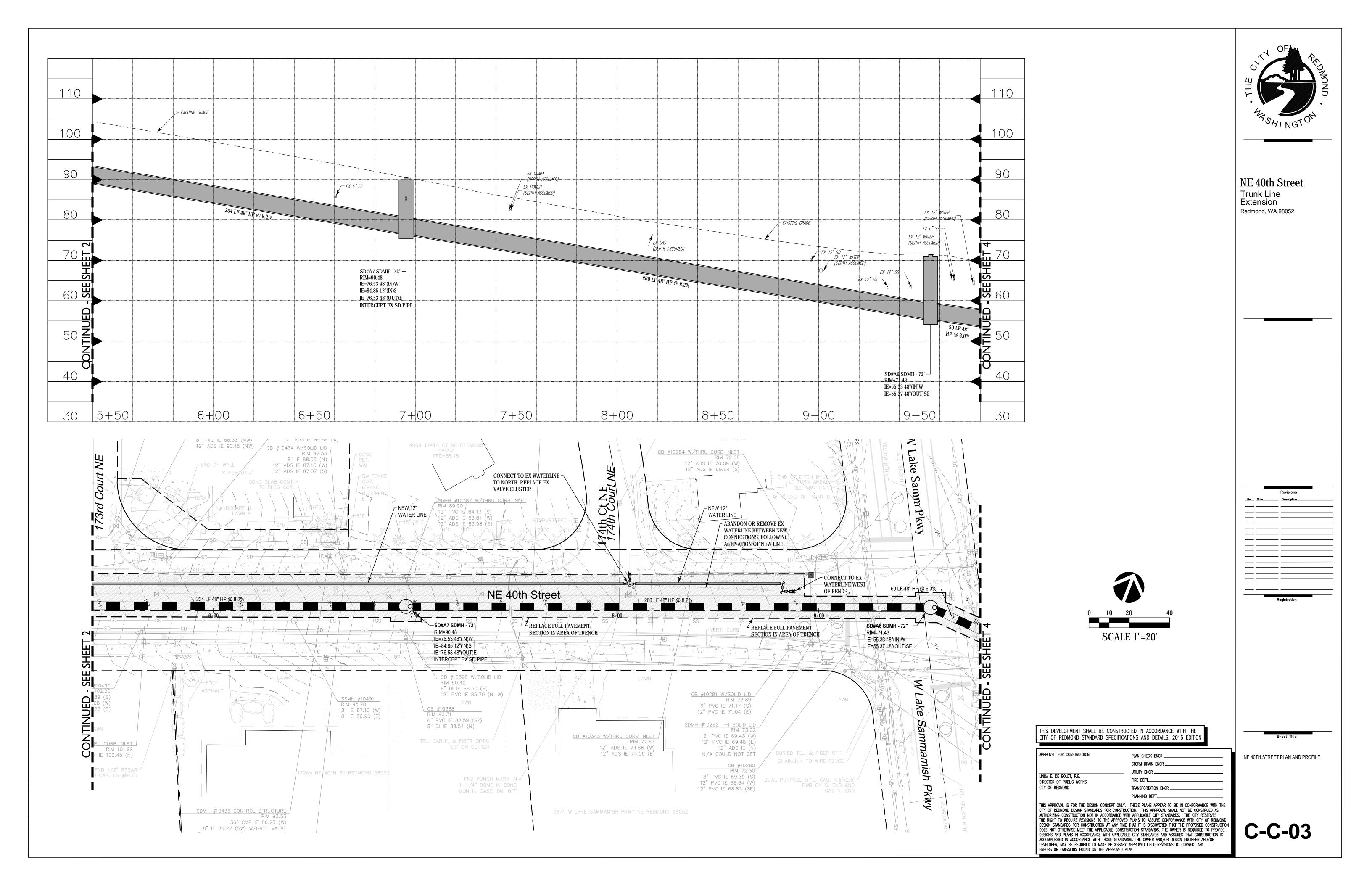


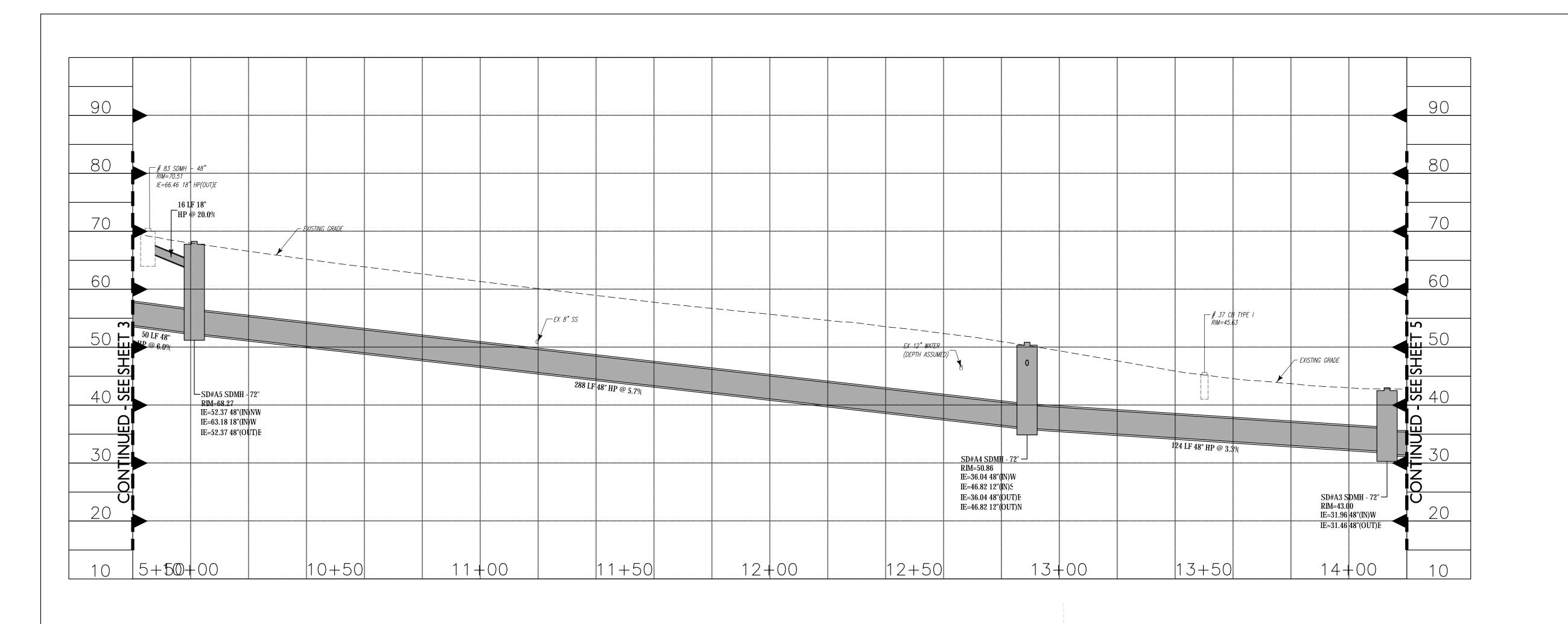
# APPENDIX A

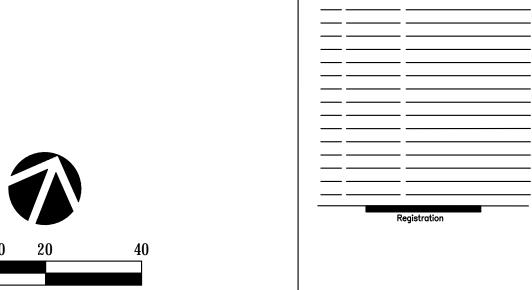
**Preliminary Construction Plans (Pierce County)** 











CB #10159 T-I RIM 49.88 4006 W LAKE SAMMAMISH PKWY NE REDMOND 98052 12" CMP II 12" CMP IE 46.33 (E) 8" CMP 12" CMP IE 46.38 (S) 4" ADS IE /--SD#A4 SDMH - 72" RIM=50.86 8" CMP IE=36.04 48"(IN)W IE=46.82 12"(IN)S IE=36.04 48"(OUT)E IE=46.82 12"(OUT)N -SD#A5 SDMH - 72" SECTION IN AREA OF TRENCH IE=52.37 48"(IN)NW SEE - REPLACE CURB, GUTTER AND SIDEWALK IN AREA OF TRENCH CONTINUED --CULV 18"PVC IE = 60.37" <sup>L</sup> REPLACE CURB, GUTTER AND - PROTECT EX CABINET / SIDEWALK IN AREA OF TRENCH SD#A3 SDMH - 72" — SDMH #10210 T-II 48' RIM 70.51 FACE 1.2' HIGH DONC BLOCK WALL RIM=43.00 - @ 'Y' CONT. TO UGC AT POLE . NE CORNER WALK IE=31.96 48"(IN)W 18" PVC IE 66.71 (W) SSMH #10170 48" IE=31.46 48"(OUT)E RIM 54.30 18" PVC IE 66.46 (E) 8" CONC IE 46.50 (E) 8" CONC IE 46.55 (W) ARROW TO TRAFFIC LOOP SSMH #10269 48" 8" CONC IE 50.61 (S) 12" ADS IE 67.90 (NW) 12" CONC IE 67.88 (S) 8" CIONC IE 50.21 (E) CB EX. CB 'D' (S.B. APT. AS-BUILTS)
RIM 54.73 18" PVC IE 67.65 (E) 12" IE 47.67 (OUT) APPROX. LOCATION OF 12" CONC CULVERT

12" IE 48.17 (W)

12" IE 48.07 (SW)

8" IE 65.37 (W-S) 8" IE 65.33 (N) OUT

8" PVC IE 70.10 (N)

THIS DEVELOPMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF REDMOND STANDARD SPECIFICATIONS AND DETAILS, 2016 EDITION

APPROVED FOR CONSTRUCTION

PLAN CHECK ENGR.

STORM DRAIN ENGR.

UTILITY ENGR.

LINDA E. DE BOLDT, P.E.
DIRECTOR OF PUBLIC WORKS

CITY OF REDMOND

TRANSPORTATION ENGR.

PLANNING DEPT.

THIS APPROVAL IS FOR THE DESIGN CONCEPT ONLY. THESE PLANS APPEAR TO BE IN CONFORMANCE WITH THE

SCALE 1"=20'

THIS APPROVAL IS FOR THE DESIGN CONCEPT ONLY. THESE PLANS APPEAR TO BE IN CONFORMANCE WITH THE CITY OF REDMOND DESIGN STANDARDS FOR CONSTRUCTION. THIS APPROVAL SHALL NOT BE CONSTRUED AS AUTHORIZING CONSTRUCTION NOT IN ACCORDANCE WITH APPLICABLE CITY STANDARDS. THE CITY RESERVES THE RIGHT TO REQUIRE REVISIONS TO THE APPROVED PLANS TO ASSURE CONFORMANCE WITH CITY OF REDMOND DESIGN STANDARDS FOR CONSTRUCTION AT ANY TIME THAT IT IS DISCOVERED THAT THE PROPOSED CONSTRUCTION DOES NOT OTHERWISE MEET THE APPLICABLE CONSTRUCTION STANDARDS. THE OWNER IS REQUIRED TO PROVIDE DESIGNS AND PLANS IN ACCORDANCE WITH APPLICABLE CITY STANDARDS AND ASSURES THAT CONSTRUCTION IS ACCOMPLISHED IN ACCORDANCE WITH THOSE STANDARDS. THE OWNER AND/OR DESIGN ENGINEER AND/OR DEVELOPER, MAY BE REQUIRED TO MAKE NECESSARY APPROVED FIELD REVISIONS TO CORRECT ANY ERRORS OR OMISSIONS FOUND ON THE APPROVED PLAN.

Sheet Title

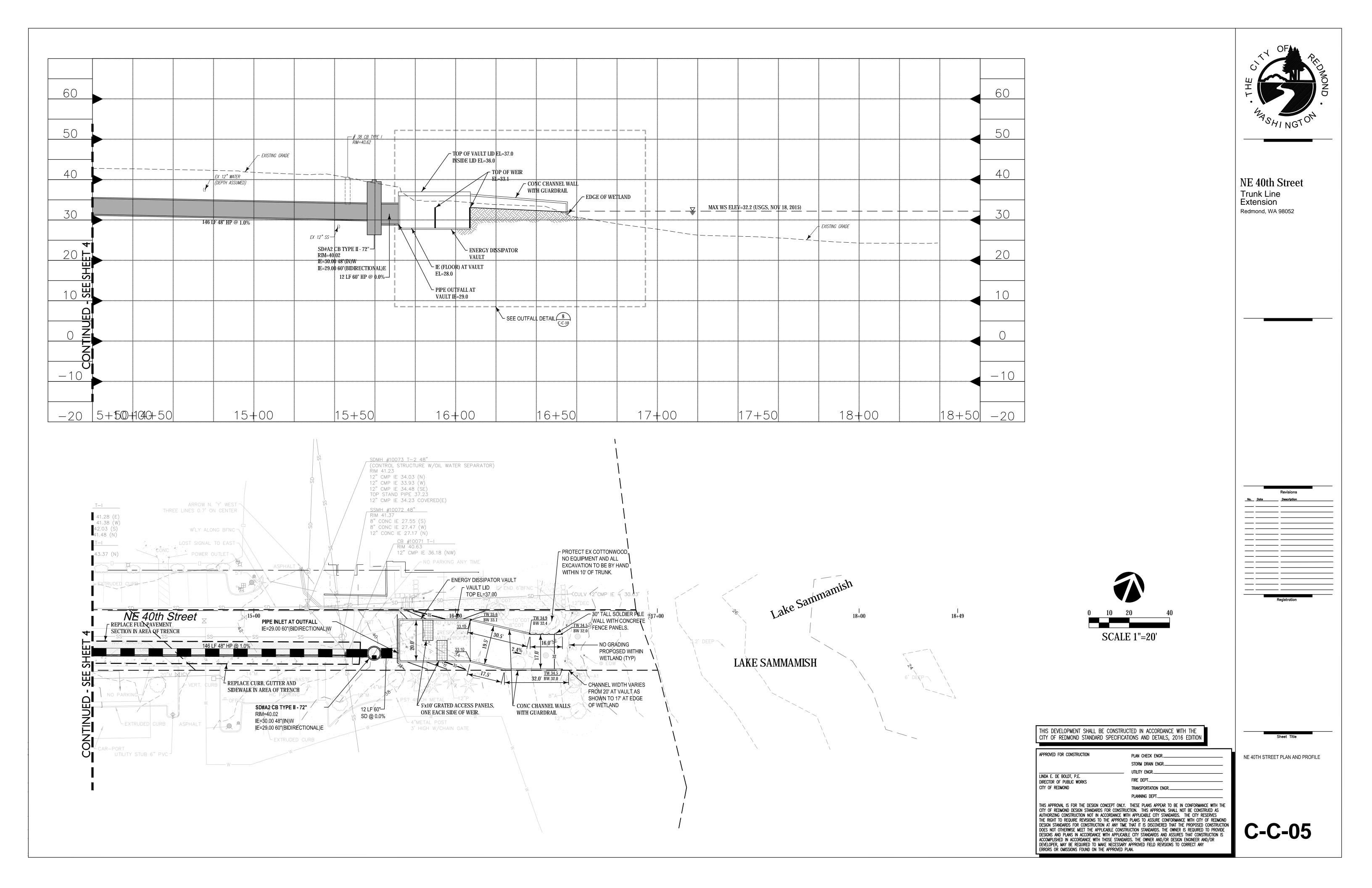
NE 40th Street

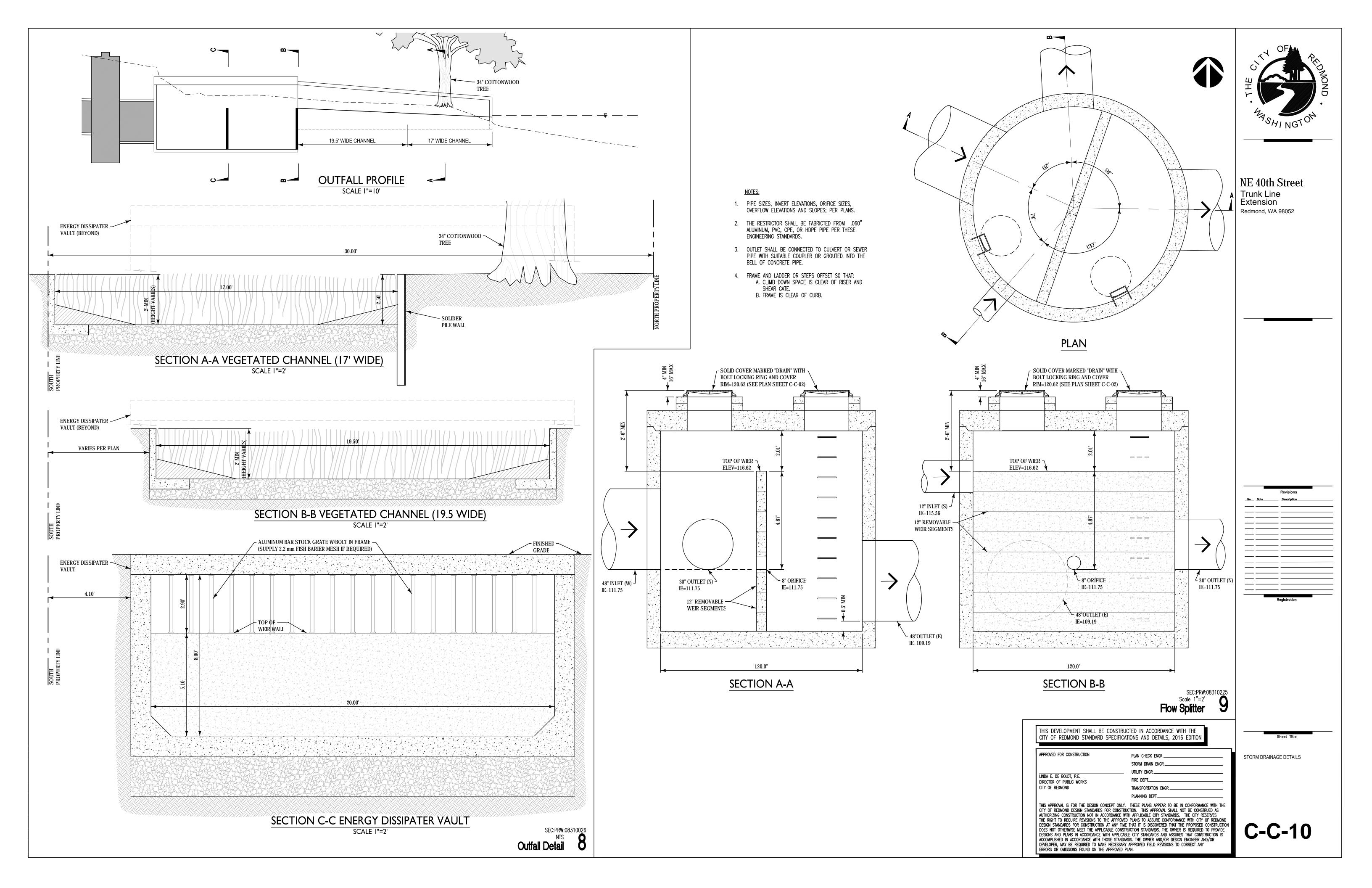
Redmond, WA 98052

Trunk Line Extension

NE 40TH STREET PLAN AND PROFILE

C-C-04





# APPENDIX B Printouts from Public Agency Databases



#### MAP LEGEND

#### Area of Interest (AOI)

Area of Interest (AOI)

#### Soils

Soil Map Unit Polygons



Soil Map Unit Points

#### Special Point Features

Blowout

☑ Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

▲ Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Stony Spot

M Very Stony Spot

Spoil Area

Wet Spot

Other

Special Line Features

#### **Water Features**

Streams and Canals

#### Transportation

→ Rails

Interstate Highways

US Routes

Major Roads

Local Roads

#### Background

Aerial Photography

#### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: King County Area, Washington Survey Area Data: Version 11, Sep 14, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

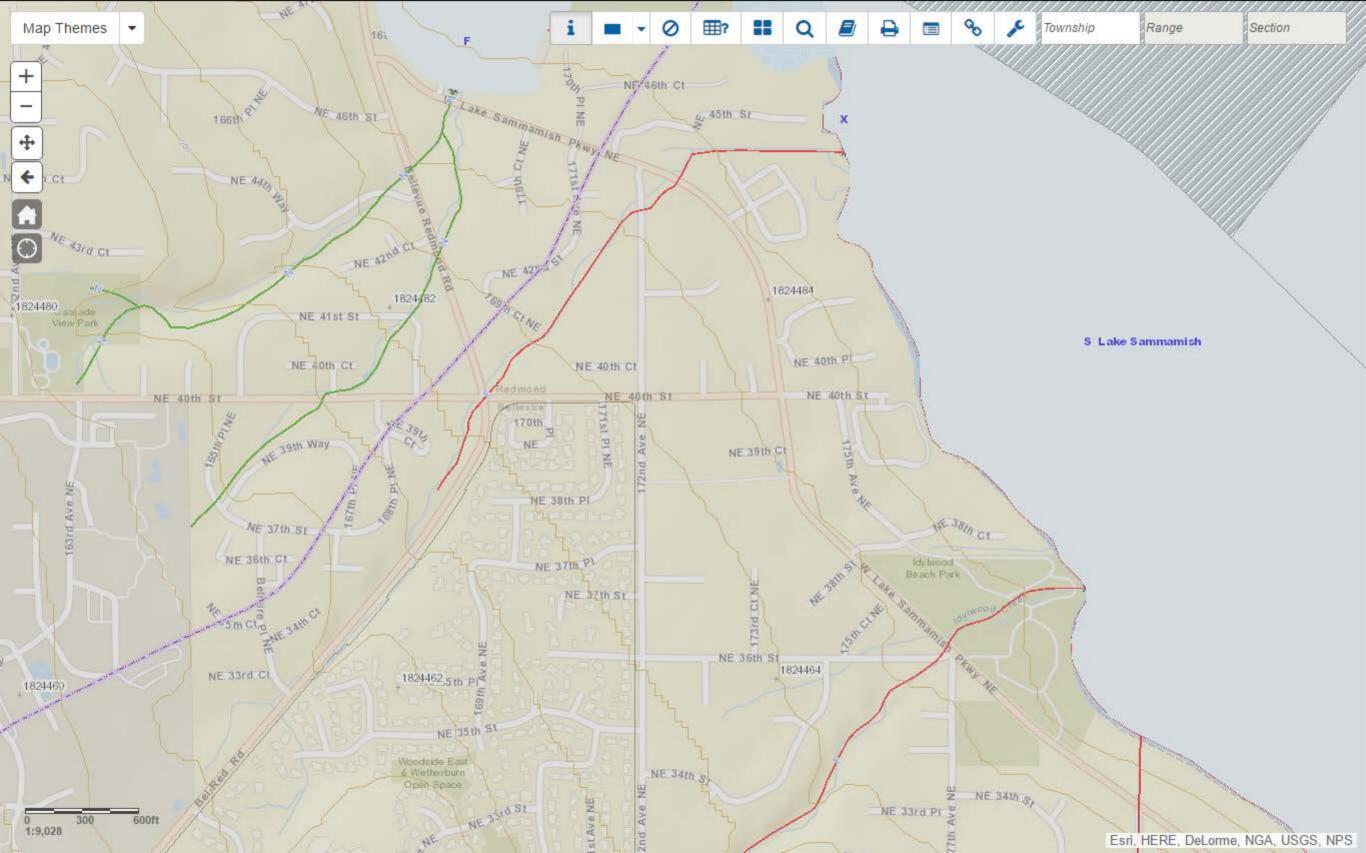
Date(s) aerial images were photographed: Aug 1, 2011—Oct 6, 2013

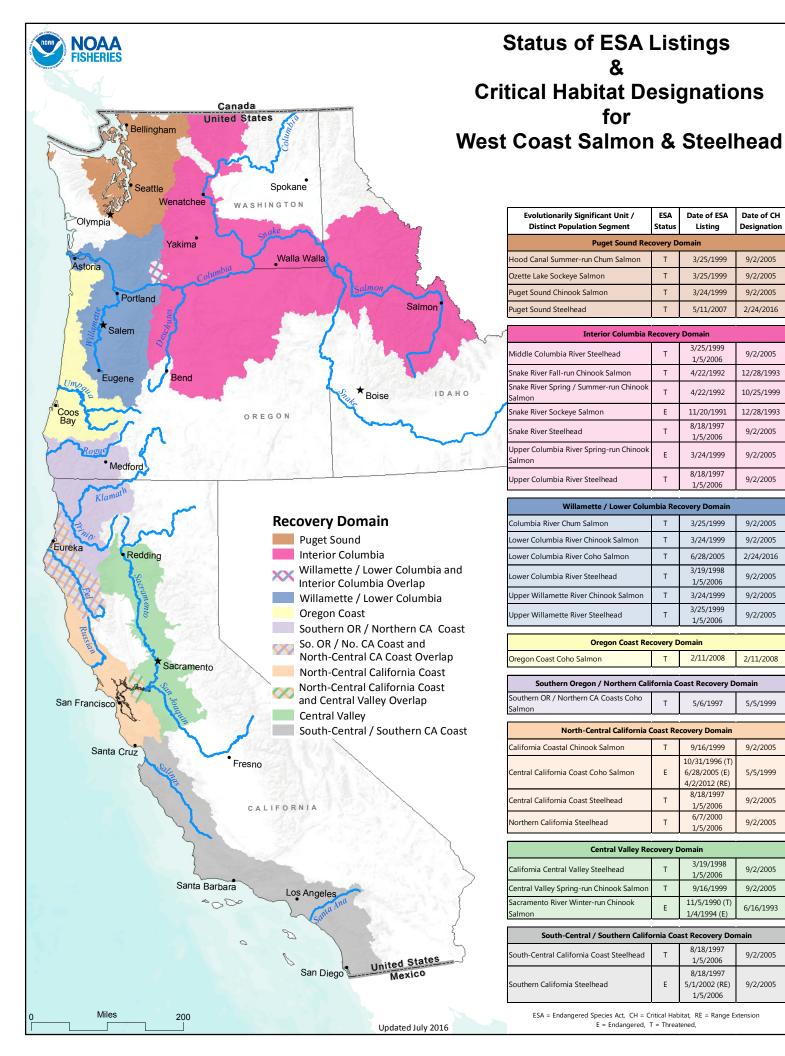
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



# **Map Unit Legend**

King County Area, Washington (WA633)					
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI		
AgC	Alderwood gravelly sandy loam, 8 to 15 percent slopes	12.9	7.1%		
AgD	Alderwood gravelly sandy loam, 15 to 30 percent slopes	12.7	7.0%		
КрВ	Kitsap silt loam, 2 to 8 percent slopes	102.6	56.6%		
Su	Sultan silt loam	9.6	5.3%		
Tu	Tukwila muck	9.6	5.3%		
W	Water	34.0	18.8%		
Totals for Area of Interest		181.4	100.0%		





## Critical Habitat Rules Cited

- 2/24/2016 (81 FR 9252) Final Critical Habitat Designation for Puget Sound Steelhead and Lower Columbia River Coho
   Salmon
- 2/11/2008 (73 FR 7816) Final Critical Habitat Designation for Oregon Coast Coho Salmon
- 9/2/2005 (70 FR 52630) Final Critical Habitat Designation for 12 ESU's of Salmon and Steelhead in WA, OR, and ID
- 9/2/2005 (70 FR 52488) Final Critical Habitat Designation for 7 ESU's of Salmon and Steelhead in CA
- 10/25/1999 (64 FR 57399) Revised Critical Habitat Designation for Snake River Spring/Summer-run Chinook Salmon
- 5/5/1999 (64 FR 24049) Final Critical Habitat Designation for Central CA Coast and Southern OR/Northern CA Coast Coho Salmon
- 12/28/1993 (58 FR 68543) Final Critical Habitat Designation for Snake River Chinook and Sockeye Salmon
- 6/16/1993 (58 FR 33212) Final Critical Habitat Designation for Sacramento River Winter-run Chinook Salmon

## **ESA Listing Rules Cited**

- 4/2/2012 (77 FR 19552) Final Range Extension for Endangered Central California Coast Coho Salmon
- 2/11/2008 (73 FR 7816) Final ESA Listing for Oregon Coast Coho Salmon
- 5/11/2007 (72 FR 26722) Final ESA Listing for Puget Sound Steelhead
- 1/5/2006 (71 FR 5248) Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead
- 6/28/2005 (70 FR 37160) Final ESA Listing for 16 ESU's of West Coast Salmon
- 5/1/2002 (67 FR 21586) Range Extension for Endangered Steelhead in Southern California
- 6/7/2000 (65 FR 36074) Final ESA Listing for Northern California Steelhead
- 9/16/1999 (64 FR 50394) Final ESA Listing for Two Chinook Salmon ESUs in California
- 3/25/1999 (64 FR 14508) Final ESA Listing for Hood River Canal Summer-run and Columbia River Chum Salmon
- 3/25/1999 (64 FR 14517) Final ESA Listing for Middle Columbia River and Upper Willamette River Steelhead
- 3/25/1999 (64 FR 14528) Final ESA Listing for Ozette Lake Sockeye Salmon
- 3/24/1999 (64 FR 14308) Final ESA Listing for 4 ESU's of Chinook Salmon
- 3/19/1998 (63 FR 13347) Final ESA Listing for Lower Columbia River and Central Valley Steelhead
- 8/18/1997 (62 FR 43937) Final ESA Listing for 5 ESU's of Steelhead
- 5/6/1997 (62 FR 24588) Final ESA Listing for Southern Oregon / Northern California Coast Coho Salmon
- 10/31/1996 (61 FR 56138) Final ESA Listing for Central California Coast Coho Salmon
- 1/4/1994 (59 FR 222) Final ESA Listing for Sacramento River Winter-run Chinook Salmon
- 4/22/1992 (57 FR 14653) Final ESA Listing for Snake River Spring/summer-run and Snake River Fall Chinook Salmon
- 11/20/1991 (56 FR 58619) Final ESA Listing for Snake River Sockeye Salmon
- 11/5/1990 (55 FR 46515) Final ESA Listing for Sacramento River Winter-run Chinook Salmon



# **United States Department of the Interior**

# FISH AND WILDLIFE SERVICE

Washington Fish and Wildlife Office 510 DESMOND DRIVE SE, SUITE 102 LACEY, WA 98503

PHONE: (360)753-9440 FAX: (360)753-9405

URL: www.fws.gov/wafwo/



September 22, 2016

Consultation Code: 01EWFW00-2016-SLI-1337

Event Code: 01EWFW00-2016-E-01531

Project Name: NE 40th St Stormwater Trunk Line Extension

Subject: List of threatened and endangered species that may occur in your proposed project

location, and/or may be affected by your proposed project

# To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated and proposed critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. The species list is currently compiled at the county level. Additional information is available from the Washington Department of Fish and Wildlife, Priority Habitats and Species website:

http://wdfw.wa.gov/mapping/phs/ or at our office website:

http://www.fws.gov/wafwo/species\_new.html. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether or not the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). You may visit our website at <a href="http://www.fws.gov/pacific/eagle/for">http://www.fws.gov/pacific/eagle/for</a> information on disturbance or take of the species and information on how to get a permit and what current guidelines and regulations are. Some projects affecting these species may require development of an eagle conservation plan: (<a href="http://www.fws.gov/windenergy/eagle\_guidance.html">http://www.fws.gov/windenergy/eagle\_guidance.html</a>). Additionally, wind energy projects should follow the wind energy guidelines (<a href="http://www.fws.gov/windenergy/">http://www.fws.gov/windenergy/</a>) for minimizing impacts to migratory birds and bats.

Also be aware that all marine mammals are protected under the Marine Mammal Protection Act (MMPA). The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas. The importation of marine mammals and marine mammal products into the U.S. is also prohibited. More information can be found on the MMPA website: <a href="http://www.nmfs.noaa.gov/pr/laws/mmpa/">http://www.nmfs.noaa.gov/pr/laws/mmpa/</a>.

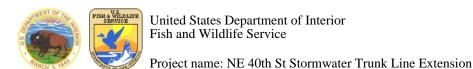
We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Related website:

National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected\_species\_list/species\_lists.html

Attachment



# **Official Species List**

# Provided by:

Washington Fish and Wildlife Office 510 DESMOND DRIVE SE, SUITE 102 LACEY, WA 98503 (360) 753-9440

http://www.fws.gov/wafwo/

Consultation Code: 01EWFW00-2016-SLI-1337

Event Code: 01EWFW00-2016-E-01531

**Project Type:** SHORELINE USAGE FACILITIES / DEVELOPMENT

**Project Name:** NE 40th St Stormwater Trunk Line Extension

**Project Description:** Trunk Line Extension

**Please Note:** The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.





# United States Department of Interior Fish and Wildlife Service

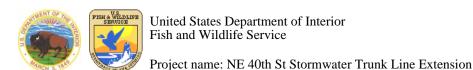
Project name: NE 40th St Stormwater Trunk Line Extension

# **Project Location Map:**



**Project Coordinates:** MULTIPOLYGON (((-122.10524867788435 47.64626882093295, -122.105151469272 47.64622913859637, -122.10511079205232 47.6461323420781, -122.10515047438889 47.64603513346575, -122.10524727090716 47.645994456246065, -122.11088527425646 47.64596554384438, -122.1109824828688 47.64600522618097, -122.1110231600885 47.64610202269924, -122.11098347775192 47.646199231311584, -122.11088668123365 47.64623990853127, -122.10524867788435 47.64626882093295)))

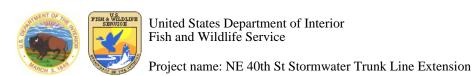
Project Counties: King, WA



# **Endangered Species Act Species List**

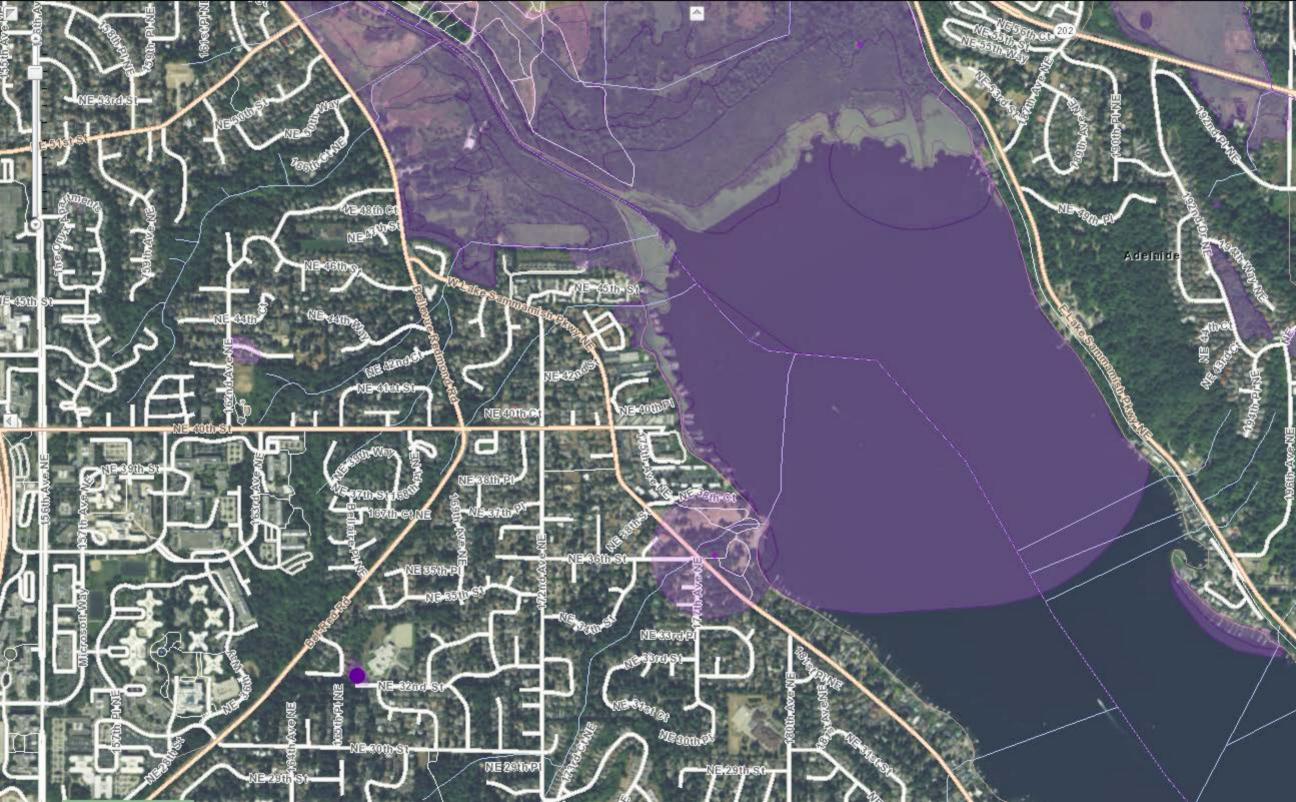
There are a total of 5 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

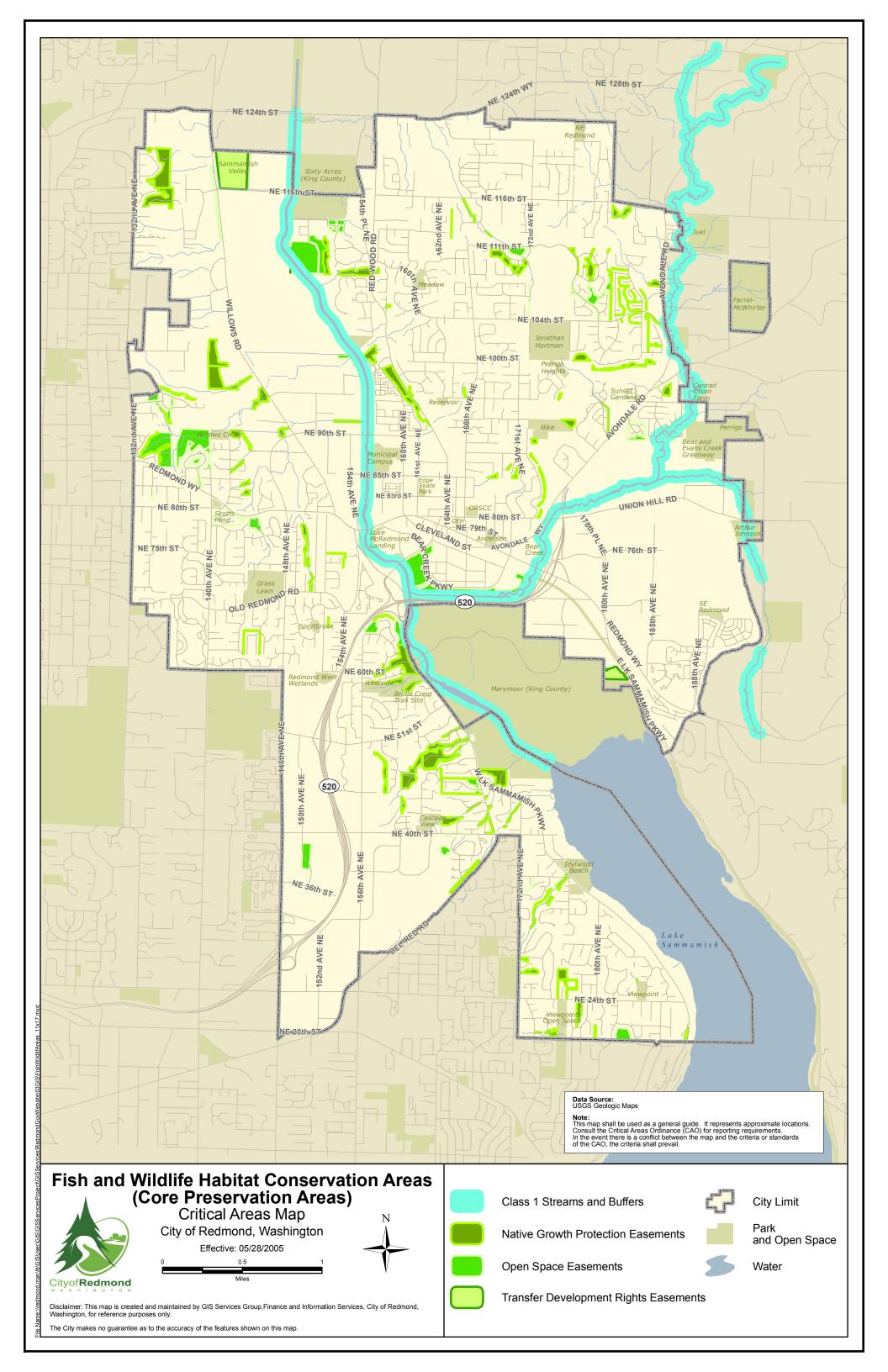
Birds	Status	Has Critical Habitat	Condition(s)		
Marbled murrelet (Brachyramphus marmoratus)  Population: U.S.A. (CA, OR, WA)	Threatened	Final designated			
Streaked Horned lark (Eremophila alpestris strigata)  Population: Wherever found	Threatened	Final designated			
Yellow-Billed Cuckoo (Coccyzus americanus)  Population: Western U.S. DPS	Threatened	Proposed			
Fishes					
Bull Trout (Salvelinus confluentus)  Population: U.S.A., conterminous, lower 48 states	Threatened	Final designated			
Mammals					
North American wolverine (Gulo gulo luscus)  Population: Wherever found	Proposed Threatened				



# Critical habitats that lie within your project area

There are no critical habitats within your project area.





# **APPENDIX C**Wetland Sample Plot Datasheets

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site:	NE 40th St Stormwater Trui	nk Line Extension	City/County:	Redmond			Sar	mpling Date:	8/4/2016
Applicant/Owner: City of Redmond				State: WA			San	Sampling Point: SP1	
Investigator(s):	A Wright		Section/Townsh	ip/Range:	Section 24 and 13	3, Township 2	5N Range 05f	Ε	
Landform (hillslope, terra	ce, etc.): slope		Local Relief (con	cave, convex, n	one): <u>r</u>	none		Slope (%):	2-4%
Subregion (LLR):	Α	Lat:	47.646056	Long:	-122.105072	Datum:	WGS 1984		
Soil Map Unit Name:	Kitsap Silt Loam, 2 to 8 perc	ent slopes		N	WI Classification: N	N/A			
Are climatic/hydrologic co	onditions on the site typical f	for this time of year?		✓ Yes	□ No (	if no, explain	in Remarks.)		
Are	Soil Hydrology	significantly distu	rbed?	Are "normal o	circumstances" pre	sent?	~	Yes No	
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	plain any answers	in Remarks.)			
SUMMARY OF FINDI			1						
Hydrophytic Vegetation P Hydric Soil Present? Weltand Hydrology Prese	✓ Yes	No No No	Is the sampled a Wetland?	rea within a	Yes No				
Remarks:									
VEGETATION - Use s	cientific names of plant								
Tree Stratum		Absolute %	Dominant	Indicator	Dominance Test	Worksheet:			
1. Black Cottonwood (Po	nulus halsamifora)	Cover 80	Species?	Status FAC	Number of domir	ant Charios			
2. Red alder (Alnus rubra		15	yes no	FAC	That are OBL, FAC			4	(A)
3. Sitka willow (Salix sitch		10	no	FAC			•		(* ')
4.	•				Total Number of	Dominant			
		105	= Total Cover		Species Acros	ss All Strata:		4	(B)
Sapling/Shurb Stratum									
1. Pacific willow (Salix la	siandra)		yes	FACW	Percent of domin			100	/ A /D\
2. 3.					That are OBL, FAC	JW, OF FAC:		100	(A/B)
<u>4.</u>		_			Prevalence Index	Worksheet:			
5.				-	Total % Cov		Multiply by:		
		20	= Total Cover		OBL Species		x 1 =	0	
Herb Stratum					FACW Species		x 2 =	0	•
1. Broadlweaf Arrowhead		45	yes	OBL	FAC Species		x 3 =	0	•
2. Reed canarygrass (Pha 3. Hardstem bulrush (Scii	-	40 15	yes no	FACW OBL	FACU Species UPL Species		x 4 =	0	•
4.	pus ucutus,		110	OBL	Column Totals:	0	(A)	0	(B)
5.					]		. ,		. , ,
6.					Preva	alence Index	= B/A =	#DIV/0!	•
7.					<u> </u>				
8.					Hydrophytic Vege				
<i>9.</i> 10.				-	1 - Rapid Test 2 - Dominanc			n	
11.					3 - Prevalence				
·		100	= Total Cover		4 - Morpholo			e supporting	data in
Woody Vine Stratum			. 5.0. 50461		Remarks or or			- 2~Pbo. m.g ,	
1.					5 - Wetland N				
2.					Problem Hyd			in)	
		0	= Total Cover		Indicators of hyd				nresent
% Bare Ground i	n Herb Stratum				unless disturbed		-	oby must be	present,
Remarks:					Hydrophytic Ve	egetation Pre	sent?	✓ Yes	No

SOIL Sampling Point: <u>SP1</u>

Беріп	IVIatri	(	Redox realures					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-6	10YR 3/1	100					loamy sand	
6-10	10YR 4/1	95	10YR 4/6	5	С	m	loamy sand	
				_				
					-			
			·					
							<del></del>	
1	<del>-</del>				2			
<sup>1</sup> Type: C=Concentration	, D=Depletion, RM-F	Reduced Ma	trix, CS=Covered or C	Coated Sand Gra	ins. Location	PL=Pore Linin	g, M=Matrix	
Hydric Soil Indicators: (	Applicable to all LR	Rs, unless o	therwise noted.)				Indicators for Pro	blematic Hydric Soils <sup>3</sup> :
Histisol (A1)		<b>✓</b>	Sandy Redox (S5)				2 cm Muck (A	10)
Histic Epipedon (A2	2)		Stripped Matrix (S6	5)			Red Parent M	laterial (TF2)
Black Histic (A3)		П	Loamy Mucky Mine	eral (F1) (except	MLRA 1)		Very Shallow	Dard Surface (TF12)
Hydrogen Sulfide (A	<b>A4</b> )	П	Loamy Gleyed Mati		•		Other (Explain	
Depleted Below Dar		Π	Depleted Matrix (F					,
Thick Dark Surface		H	Redox Dark Surface				<sup>3</sup> Indicators of hyd	rophytic vegetation and wetland
	•	H					•	
Sandy Mucky Miner		H	Depleted Dark Surf					e present, unless disturbed or
Sandy Gleyed Matri		Ш	Redox Depressions				problematic.	
Restrictive Layer (if pre				H	ydric Soil Preser	it?		
Туре	-						✓	Yes No
Depth (inches)	):							
Remarks:								
LIVEROLOCY								
HYDROLOGY								
Wetland Hydrology Ind								
Primary Indicators (min	imum of one require	ed; check all	that apply)				Secondary Indicat	ors (2 or more required)
			_				_	
Surface Water (A1)			Water-Stained	Leaves (B9) (exc	ept MLRA		☐ Water-Staine	d Leaves (B9) <b>(MLRA</b>
✓ High Water Table (A	42)		1, 2, 4A, and 4	<b>₿</b> )			1, 2, 4A, and	4B)
✓ Saturation (A3)			Salt Crust (B11)	)			☐ Drainage Patt	erns (B10)
Water Marks (B1)			Aquatic Inverte	ebrates (B13)			Dry-Season W	/ater Table (C2)
Sediment Deposits	(B2)		Hydrogen Sulfic					ible on Aerial Imagery (C9)
Drift Deposits (B3)				spheres along Liv	ving Roots (C3)		Geomorphic F	
Algal Mat or Crust (	'B4)			duction Iron (C4)			Shallow Aquit	. ,
Iron Deposits (B5)	, = . ,			duction Tilled So			FAC-Neutral T	
Surface Soil Cracks	(R6)			essed Plants (D1)			=	ounds (D6) <b>(LRR A)</b>
		71			(LNN A)			
Inundation Visible o	0 , .	•	U Other (Explain	in Kemarks)			Frost-Heave F	Hummocks (D7)
Sparsely Vegetated	Concave Surface (B)	3)						
Field Observations:			5 .1 /	Wetla	nd Hydrology Pr	esent?		
Surface Water Present?		✓ No	Depth (inches):					D
Water Table Present?	✓ Yes	∐ No	Depth (inches):	5	•		✓	Yes No
Saturation Present?	✓ Yes	☐ No	Depth (inches):	3				
(includes capillary fringe								
Describe Recorded Data	a (stream gauge, mo	nitoring wel	l, aerial photos, prev	ious inspections	), if available:			
Remarks:								

# WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site:	NE 40th St Stormwater Tr	runk Line Extension	City/County:	Redmond			Sar	mpling Date:	8/4/2016
Applicant/Owner:	City of Redmond			State	: <u>WA</u>		San	mpling Point:	SP2
Investigator(s):	A Wright		Section/Township	ip/Range:	Section 24 and 13	3, Township 2	:5N Range 05E	<u> </u>	
Landform (hillslope, terra	ace, etc.): slope		Local Relief (con	cave, convex, n	none): <u>ı</u>	none		Slope (%):	2-4%
Subregion (LLR):	Α	Lat:	47.646056	Long	: -122.105072	Datum:	WGS 1984		
Soil Map Unit Name:	Kitsap Silt Loam, 2 to 8 pe	ercent slopes		N'	WI Classification: <u>I</u>	N/A			
Are climatic/hydrologic c	conditions on the site typica	al for this time of year?		✓ Yes	□ No	(if no, explain	in Remarks.)		
Are Vegetation	Soil Hydrology	significantly distu	rbed?	Are "normal o	circumstances" pre	esent?	~	Yes No	
Are Vegetation	Soil Hydrology	naturally problem	atic?	(if needed, ex	cplain any answers	in Remarks.)			
SUMMARY OF FIND									
Hydrophytic Vegetation Hydric Soil Present? Weltand Hydrology Pres	Yes	│ No ✓ No ✓ No	Is the sampled a Wetland?	rea within a	Yes No				
Remarks:									
VEGETATION - Use s	scientific names of pla								
Tree Stratum		Absolute %	Dominant	Indicator	Dominance Test	Worksheet:			
1. Black Cottonwood (Po	onulus halsamifera)	Cover 70	Species? yes	Status	Number of domi	nant Snacias			
2. Red Alder (Alnus rubro		30	yes		That are OBL, FA	•		4	(A)
3.	•						-		<u></u>
4.					Total Number of				4-1
Sapling/Shurb Stratum		100	= Total Cover		Species Acro	ss All Strata:		4	(B)
1. Himalayan Blackberry	(Rubus armeniacus)	10	yes		Percent of domin	ant Species			
2.	(Hazas armemaeas)		700		That are OBL, FA	•		100	(A/B)
3.									
4.					Prevalence Index				
<i>5.</i>			= Total Cover		Total % Co OBL Species	ver of:	$\frac{\text{Multiply by:}}{\text{x 1 =}}$	0	
Herb Stratum			- Total Cover		FACW Species		x 2 =	0	
1. Reed canarygrass (Ph	alaris arundinacea)	15	yes		FAC Species		x 3 =	0	
2.					FACU Species		x 4 =	0	
<i>3. 4.</i>					UPL Species	0	x 5 =	0	(D)
<i>5.</i>					Column Totals: _		(A)		(B)
6.					Prev	alence Index :	= B/A =	#DIV/0!	
7.					]				
8.					Hydrophytic Vego				
<i>9.</i> 10.					☐ 1 - Rapid Tes ☐ 2 - Dominand			n	
11.					3 - Prevalenc				
Woody Vine Stratum		15	= Total Cover		4 - Morpholo			e supporting o	lata in
1.				_		Non-Vascular			
2.							etation (Explai	in)	
% Bare Ground	in Herb Stratum	0	= Total Cover		<sup>1</sup> Indicators of hydunless disturbed		-	logy must be	present,
Remarks:		<del></del>			Hydrophytic V			√ Yes	No

SOIL Sampling Point: <u>SP2</u>

Depth	Matr	ix	Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-12	10YR 3/3	100	<u> </u>				sandy loam	
							. ,	
							. ,	
	·		<u> </u>					
<sup>1</sup> Type: C=Concentration	, D=Depletion, RM-	-Reduced Ma	atrix, CS=Covered or (	Coated Sand Gra	ins. <sup>2</sup> Location:	PL=Pore Linir	ng, M=Matrix	
Hydric Soil Indicators: (	•							oblematic Hydric Soils <sup>3</sup> :
		_						
Histisol (A1)			Sandy Redox (S5)				2 cm Muck (	
Histic Epipedon (A2	)		Stripped Matrix (Se					Material (TF2)
Black Histic (A3)			Loamy Mucky Mine		MLRA 1)			Dard Surface (TF12)
Hydrogen Sulfide (A	.4)		Loamy Gleyed Mat	rix (F2)			U Other (Expla	in in Remarks)
Depleted Below Dar	rk Surface (A11)		Depleted Matrix (F	3)				
☐ Thick Dark Surface (	(A12)		Redox Dark Surface	e (F6)			<sup>3</sup> Indicators of hyd	drophytic vegetation and wetland
Sandy Mucky Miner	al (S1)		Depleted Dark Surf	ace (F7)			hydrology must l	pe present, unless disturbed or
Sandy Gleyed Matri	x (S4)		Redox Depressions	(F8)			problematic.	
Restrictive Layer (if pre	sent):			H	ydric Soil Presen	t?		
Туре	:						Г	Yes V No
Depth (inches)	:						L	
Remarks:	·		<u> </u>		1			
HYDROLOGY								
Wetland Hydrology Ind	icators:							
Primary Indicators (min		red: check al	I that apply)				Secondary Indica	itors (2 or more required)
			эрр. //				,	(= 0
Surface Water (A1)			☐ Water-Stained	Leaves (B9) (exc	ent MLRA		☐ Water-Staine	ed Leaves (B9) <b>(MLRA</b>
High Water Table (A	12)		1, 2, 4A, and 4				1, 2, 4A, and	
Saturation (A3)	·-/		Salt Crust (B11				☐ Drainage Pat	-
Water Marks (B1)			Aquatic Inverte					Water Table (C2)
Sediment Deposits	(B2)		Hydrogen Sulfi					sible on Aerial Imagery (C9)
Drift Deposits (B3)	(52)			spheres along Liv	ving Roots (C3)			Position (D2)
Algal Mat or Crust (	R/I)			duction Iron (C4			Shallow Aqui	• •
Iron Deposits (B5)	D4)			duction filled So			FAC-Neutral	• •
Surface Soil Cracks (	(DC)			essed Plants (D1)				Nounds (D6) (LRR A)
Inundation Visible o		271	Other (Explain		(LNN A)			Hummocks (D7)
	0, 1	•		iii Keiiidi KS)			FIOST-Heave	Hullillocks (D7)
Sparsely Vegetated Field Observations:	Concave Surface (E	30)		\\/atla	nd Hudralagu Dr	ocont?		
Surface Water Present?	□ vos	□ No	Donth (inches):	vvetia	nd Hydrology Pro I	esentr		
Water Table Present?		✓ No	Depth (inches):				Г	Yes V No
Saturation Present?	Yes	✓ No	Depth (inches):				L	fes □ No
	Yes	✓ No	Depth (inches):		•			
(includes capillary fringe	•	:	II aawial mbataa muu		) if a vailable.			
Describe Recorded Data	i (stream gauge, mo	onitoring we	ii, aeriai priotos, prev	nous inspections	), if available:			
Damanlar								
Remarks:								

# APPENDIX D Wetland Rating Forms and Figures

# **RATING SUMMARY – Western Washington**

Name of wetland (or ID #):	Wetland A	Date of site visit:	8/4/2016					
Rated by A. Wright	Trained by Ecology? ☑ Yes ☐ No	Date of training_	Apr-15					
HGM Class used for rating	Lake Fringe Wetland has multipl	e HGM classes?	Yes ☑ No					
NOTE: Form is not complete with out the figures requested (figures can be combined).  Source of base aerial photo/map Google Earth Pro  OVERALL WETLAND CATEGORY II (based on functions 🗸 or special characteristics 🗌 )								
	I based on FUNCTIONS							
	_	Score for each function based						
X								
	Category III - Total score = 16 - 19							
	Category IV - Total score = 9 - 15	ratings						

FUNCTION	Improving Water Quality	Hydrologic	Habitat		
List appropriate rating (H, M, L)					
Site Potential	M	L	L		
Landscape Potential	Н	Н	L		
Value	Н	Н	Н	Total	
Score Based on Ratings	8	7	5	20	

# function based on three ratings (order of ratings is not important) 9 = H, H, H 8 = H, H, M 7 = H, H, L 7 = H, M, M 6 = H, M, L 6 = M, M, M 5 = H, L, L 5 = M, M, L 4 = M, L, L 3 = L, L, L

## 2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	Х

# Maps and Figures required to answer questions correctly for Western Washington

## **Depressional Wetlands**

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

## Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (can be added to another figure)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

## Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	1
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	1
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	1
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	2
polygons for accessible habitat and undisturbed habitat		2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	4

#### Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of <b>dense</b> trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to another figure)		
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

# **HGM Classification of Wetland in Western Washington**

For questions 1 -7, the criteria described must apply to the entire unit being rated. If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are t	the water levels in the entire unit usual	y controlled by tides exc	cept during floods?
	☑ NO - go to 2	☐ <b>YES</b> - the wetland c	lass is <b>Tidal Fringe</b> - go to 1.1
1.	1 Is the salinity of the water during per	iods of annual low flow l	pelow 0.5 ppt (parts per thousand)?
		a Fréshwater Tidal Fring <b>Estuarine</b> wetland and	YES - Freshwater Tidal Fringe ge use the forms for Riverine wetlands. is not scored. This method cannot be
	entire wetland unit is flat and precipitati water and surface water runoff are NC		
	☑ NO - go to 3  If your wetland can be classified as	<del>-</del>	YES - The wetland class is Flats form for Depressional wetlands.
	the entire wetland unit <b>meet all</b> of the The vegetated part of the wetland is plants on the surface at any time of At least 30% of the open water area	on the shores of a body the year) at least 20 ac (	•
	□ NO - go to 4	✓ <b>YES</b> - The wetland	class is <b>Lake Fringe</b> (Lacustrine Fringe)
	the entire wetland unit <b>meet all</b> of the The wetland is on a slope ( <i>slope call</i> The water flows through the wetland It may flow subsurface, as sheetflow The water leaves the wetland <b>witho</b>	n be very gradual), in one direction (unidire r, or in a swale without d	ectional) and usually comes from seeps. istinct banks.
	□ NO - go to 5		YES - The wetland class is Slope
	Surface water does not pond in these sions or behind hummocks (depression		occasionally in very small and shallow eter and less than 1 ft deep).
	the entire wetland unit <b>meet all</b> of the The unit is in a valley, or stream chat from that stream or river, The overbank flooding occurs at lea	nnel, where it gets inund	dated by overbank flooding
	□ NO - go to 6		YES - The wetland class is Riverine
NOTE:	The Riverine unit can contain denress	ons that are filled with w	rater when the river is not flooding

<ol><li>Is the entire wetland unit in a topographic depression some time during the year? This means that any outlet</li></ol>	on in which water ponds, or is saturated to the surface, at et, if present, is higher than the interior of the wetland.
□ NO - go to 7	$\square$ <b>YES</b> - The wetland class is <b>Depressional</b>
7. Is the entire wetland unit located in a very flat area ver the unit does not pond surface water more than a few groundwater in the area. The wetland may be ditched,	, ,
□ NO - go to 8	$\square$ <b>YES</b> - The wetland class is <b>Depressional</b>

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

**NOTE**: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit	HGM class to	
being rated	use in rating	
Slope + Riverine	Riverine	
Slope + Depressional	Depressional	
Slope + Lake Fringe	Lake Fringe	
Depressional + Riverine along stream	Depressional	
within boundary of depression		
Depressional + Lake Fringe	Depressional	
Riverine + Lake Fringe	Riverine	
Salt Water Tidal Fringe and any other	Treat as	
class of freshwater wetland	ESTUARINE	

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

LAKE FRINGE WETLANDS  Water Quality Functions - Indicators that the site functions to improve water quality			
L 1.0. Does the site have the potential to improve water quality?		. 900	
L 1.1. Average width of plants along the lakeshore ( <i>use polygons of Cowardin classes</i> ):			
Plants are more than 33 ft (10 m) wide	•	oints = 6	
Plants are more than 16 ft (5 m) wide and < 33 ft	•	oints = 3	1
Plants are more than 6 ft (2 m) wide and < 16 ft	•	oints = 1	
Plants are less than 6 ft wide		oints = 0	
L 1.2. Characteristics of the plants in the wetland: Choose the appropriate des			
in the highest points, and do not include any open water in your estimate of co	•		
herbaceous plants can be either the dominant form or as an understory in a sh	nrub or fores	st	
community. These are not Cowardin classes. Area of cover is total cover in the	e unit, but it	can be	
in patches. Herbaceous does not include aquatic bed.			
Cover of herbaceous plants is > 90% of the vegetated area	po	oints = 6	3
Cover of herbaceous plants is $ > \frac{2}{3} $ of the vegetated area	po	oints = 4	
$\square$ Cover of herbaceous plants is $> \frac{1}{3}$ of the vegetated area	po	oints = 3	
$\Box$ Other plants that are not aquatic bed > $^2/_3$ unit	р	oints = 3	
Other plants that are not aquatic bed in > 1/3 vegetated area	po	oints = 1	
Aquatic bed plants and open water cover $> \frac{3}{2}/3$ of the unit	•	oints = 0	
Total for L 1 Add the points			4
Rating of Site Potential If score is:			the first page
L 2.0. Does the landscape have the potential to support the water quality function of the site?			
L 2.1. Is the lake used by power boats?  Yes = 1 No = 0			
L 2.2. Is > 10% of the area within 150 ft of wetland unit on the upland side in			
land uses that generate pollutants?	Yes = 1	No = 0	1
L 2.3. Does the lake have problems with algal blooms or excessive plant			
growth such as milfoil?	Yes = 1	No = 0	1
Total for L 2 Add the points	in the boxe	s above	3
Rating of Landscape Potential If score is:	Record the	rating on	the first page
	_		
L 3.0. Is the water quality improvement provided by the site valuable to society		1	
L 3.1. Is the lake on the 303(d) list of degraded aquatic resources?	Yes = 1	No = 0	1
L 3.2. Is the lake in a sub-basin where water quality is an issue (at least one			1
aquatic resource in the basin is on the 303(d) list)?	Yes = 1	No = 0	•
L 3.3. Has the site been identified in a watershed or local plan as important for			
maintaining water quality? Answer YES if there is a TMDL for the lake or			2
basin in which the unit is found. Yes = 2 No = 0			
Total for L 3 Add the points			4
Rating of Value If score is: $\bigcirc$ 2 - 4 = H $\bigcirc$ 1 = M $\bigcirc$ 0 = L	Record the	rating on	the first page

LAKE FRINGE WETLANDS			
Hydrologic Functions - Indicators that the wetland unit functions to reduce shoreline erosion			
L 4.0. Does the site have the potential to reduce shoreline erosion?			
L 4.1. Distance along shore and average width of Cowardin classes along the lakeshore			
(do not include Aquatic bed): Choose the highest scoring description that mate	ches conditions in		
the wetland.			
> 3/4 of distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	•	2	
$\square$ > 3/4 of distance is Scrub-shrub or Forested at least 6 ft (2 m) wide	points = 4	_	
$\square$ > 1/4 distance is Scrub-shrub or Forested at least 33 ft (10 m) wide	points = 4		
Plants are at least 6 ft (2 m) wide (any type except Aquatic bed)	points = 2		
Plants are less than 6 ft (2 m) wide (any type except Aquatic bed)	points = 0		
Rating of Site Potential If score is:	Record the rating on	the first page	
L 5.0. Does the landscape have the potential to support the hydrologic function	s of the site?		
L 5.1. Is the lake used by power boats with more than 10 hp?	Yes = 1 No = 0	1	
L 5.2. Is the fetch on the lake side of the unit at least 1 mile in distance?	Yes = 1 No = 0	1	
Total for L 5 Add the points	in the boxes above	2	
Rating of Landscape Potential If score is:  2 = H 1 = M 0 = L	Record the rating on	the first page	
L 6.0. Are the hydrologic functions provided by the site valuable to society?			
L 6.1. Are there resources along the shore that can be impacted by erosion? If	more than one		
resource is present, choose the one with the highest score.			
There are human structures or old growth/mature forests within 25 ft			
of OHWM of the shore in the unit	points = 2		
☐ There are nature trails or other paths and recreational activities		2	
within 25 ft of OHWM	points = 1		
☐ Other resources that could be impacted by erosion	points = 1		
There are no resources that can be impacted by erosion along the			
shores of the unit	points = 0		
Rating of Value If score is:  2 = H  1 = M  0 = L	Record the rating on	the first page	

NOTES and FIELD OBSERVATIONS:

6

These questions apply to wetlands of all HGM classes.		
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		
H 1.0. Does the site have the potential to provide habitat?		
H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.		
<ul> <li>✓ Aquatic bed</li> <li>✓ Emergent</li> <li>✓ Scrub-shrub (areas where shrubs have &gt; 30% cover)</li> <li>✓ Forested (areas where trees have &gt; 30% cover)</li> <li>✓ I structures: points - 1</li> <li>✓ I structure: points = 0</li> <li>✓ If the unit has a Forested class, check if:</li> <li>✓ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon</li> </ul>	1	
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (see text for descriptions of hydroperiods).		
<ul> <li>□ Permanently flooded or inundated</li> <li>□ Seasonally flooded or inundated</li> <li>□ Occasionally flooded or inundated</li> <li>□ Saturated only</li> <li>□ Permanently flowing stream or river in, or adjacent to, the wetland</li> <li>□ Seasonally flowing stream in, or adjacent to, the wetland</li> </ul>	2	
<ul><li>☑ Lake Fringe wetland</li><li>☑ Freshwater tidal wetland</li><li>2 points</li><li>2 points</li></ul>		
H 1.3. Richness of plant species  Count the number of plant species in the wetland that cover at least 10 ft <sup>2</sup> .  Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle  If you counted: > 19 species points = 2 5 - 19 species points = 1 < 5 species points = 0	0	
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.		
None = 0 points  Low = 1 point  Moderate = 2 points	1	
All three diagrams in this row are <b>HIGH</b> = 3 points		

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number	
of points.  ☐ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long)  ☐ Standing snags (dbh > 4 in) within the wetland  ☐ Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends	
at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at	1
least 33 ft (10 m)  ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning  (> 20 degree alone) OR signs of recent beaver activity are present (sut abrube or trace)	1
(> 30 degree slope) OR signs of recent beaver activity are present ( <i>cut shrubs or trees</i> that have not yet weathered where wood is exposed)	
☐ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas	
that are permanently or seasonally inundated (structures for egg-laying by amphibians)	
☑ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see	
H 1.1 for list of strata)	-
Total for H 1 Add the points in the boxes above  Rating of Site Potential If Score is: ☐ 15 - 18 = H ☐ 7 - 14 = M ☑ 0 - 6 = L Record the rating on	the first name
Rating of Site Potential if Score is. 115-16 = F 17-14 = W 10-6 = L Record the rating on	uie iirst page
H 2.0. Does the landscape have the potential to support the habitat function of the site?	
H 2.1 Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate:	
% undisturbed habitat + (% moderate & low intensity land uses / 2 ) =	
If total accessible habitat is:	0
$ > \frac{1}{3} (33.3\%) \text{ of 1 km Polygon} $ points = 3	U
1	
20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1	
< 10 % of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.	
Calculate:	
% undisturbed habitat + (% moderate & low intensity land uses / 2 ) =	
Undisturbed habitat > 50% of Polygon points = 3	0
Undisturbed habitat 10 - 50% and in 1-3 patches points = 3	
Undisturbed habitat 10 - 50% and > 3 patches points = 1	
Undisturbed habitat < 10% of 1 km Polygon points = 0	
H 2.3 Land use intensity in 1 km Polygon: If	
> 50% of 1 km Polygon is high intensity land use points = (-2)	-2
≤ 50% of 1km Polygon is high intensity points = 0	
Total for H 2 Add the points in the boxes above	-2
Rating of Landscape Potential If Score is:  4-6=H 1-3=M <a></a> 1-3=M <a></a> < 1=L Record the rating on	the first page
H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose</i>	
only the highest score that applies to the wetland being rated.	
Site meets ANY of the following criteria: points = 2	
☐ It has 3 or more priority habitats within 100 m (see next page)	
☑ It provides habitat for Threatened or Endangered species (any plant	
or animal on the state or federal lists)	
<ul><li>☑ It is mapped as a location for an individual WDFW priority species</li><li>☐ It is a Wetland of High Conservation Value as determined by the</li></ul>	2
Department of Natural Resources	
☐ It has been categorized as an important habitat site in a local or	
regional comprehensive plan, in a Shoreline Master Plan, or in a	
watershed plan	
Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1	
Site does not meet any of the criteria above points = 0	*
Rating of Value If Score is: $\  \  \  \  \  \  \  \  \  \  \  \  \ $	the first page

Wetland Rating System for Western WA: 2014 Update Rating Form - Effective January 1, 2015

# **WDFW Priority Habitats**

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.

http://wdfw.wa.gov/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: NOTE: This question is independent of the land use between the wetland unit and the priority habitat. Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha). ☐ Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various species of native fish and wildlife (full descriptions in WDFW PHS report). Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock. ☐ Old-growth/Mature forests: Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest. ☐ **Oregon White Oak**: Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (full descriptions in WDFW PHS report p. 158 – see web link above). Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. Westside Prairies: Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161 – see web link above). Instream: The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. ☑ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page). ☐ Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. ☐ **Cliffs**: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation. Talus: Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ☐ Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12

**Note**: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

# **CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type					
Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.					
SC 1.0. I	Estuarine Wetlands				
	Does the wetland meet the following criteria for Estuarine wetlands?				
	The dominant water regime is tidal,				
	Vegetated, and				
	With a salinity greater than 0.5 ppt				
00.4.4	☐ Yes - Go to SC 1.1 ☑ No = Not an estuarine wetland				
SC 1.1.	Is the wetland within a National Wildlife Refuge, National Park, National Estuary				
	Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific				
	Reserve designated under WAC 332-30-151?				
SC 1.2.					
JC 1.2.	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing,				
	and has less than 10% cover of non-native plant species. (If non-native species are				
	Spartina, see page 25)				
	At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-				
	grazed or un-mowed grassland.				
	The wetland has at least two of the following features: tidal channels, depressions with				
	open water, or contiguous freshwater wetlands.				
	☐ Yes = Category I ☐ No = Category II				
SC 2.0. \	Wetlands of High Conservation Value (WHCV)				
SC 2.1.					
	of Wetlands of High Conservation Value?				
	☐ Yes - Go to <b>SC 2.2</b> ☑ No - Go to <b>SC 2.3</b>				
SC 2.2.	Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?				
	☐ Yes = Category I ☑ No = Not WHCV				
SC 2.3.	Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?				
	http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf				
	☐ Yes - Contact WNHP/WDNR and to SC 2.4  ☐ No = Not WHCV				
SC 2.4.	Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation				
	Value and listed it on their website?				
	☐ Yes = Category I ☐ No = Not WHCV				
SC 3.0. I					
	Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation				
	in bogs? Use the key below. If you answer YES you will still need to rate the				
00.04	wetland based on its functions.				
SC 3.1.	Does an area within the wetland unit have organic soil horizons, either peats or mucks,				
	that compose 16 in or more of the first 32 in of the soil profile?				
SC 3.2.	☐ Yes - Go to <b>SC 3.3</b> ☐ No - Go to <b>SC 3.2</b> Does an area within the wetland unit have organic soils, either peats or mucks, that are				
SC 3.2.	less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic				
	ash, or that are floating on top of a lake or pond?				
SC 3.3.	Does an area with peats or mucks have more than 70% cover of mosses at ground				
0.0.	level, AND at least a 30% cover of plant species listed in Table 4?				
	☐ Yes = Is a Category I bog ☐ No - Go to SC 3.4				
	NOTE: If you are uncertain about the extent of mosses in the understory, you may				
	substitute that criterion by measuring the pH of the water that seeps into a hole dug at				
	least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present,				
	the wetland is a bog.				
SC 3.4.	Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir,				
	western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann				
	spruce, or western white pine, AND any of the species (or combination of species) listed				
	in Table 4 provide more than 30% of the cover under the canopy?				
	☐ Yes = Is a Category I bog ☐ No = Is not a bog				

SC 4.0. I	Forested Wetlands			
	Does the wetland have at least 1 contiguous acre of forest that meets one of these			
	criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you</i>			
	answer YES you will still need to rate the wetland based on its functions.			
	forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac			
	(20 trees/ha) that are at least 200 years of age OR have a diameter at breast height			
	(dbh) of 32 in (81 cm) or more.			
	Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-			
	200 years old OR the species that make up the canopy have an average diameter (dbh)			
	exceeding 21 in (53 cm).			
00 - 0 1	☐ Yes = Category I ☑ No = Not a forested wetland for this section			
SC 5.0. V	Wetlands in Coastal Lagoons			
	Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?			
	The wetland lies in a depression adjacent to marine waters that is wholly or partially			
	separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently,			
	rocks The largest in which the wetland is located centains pended water that is saline or			
	The lagoon in which the wetland is located contains ponded water that is saline or			
	brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to			
	be measured near the bottom)  ☐ Yes - Go to SC 5.1  ☑ No = Not a wetland in a coastal lagoon			
   C	☐ Yes - Go to SC 5.1 ☐ No = Not a wetland in a coastal lagoon Does the wetland meet all of the following three conditions?			
	The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing),			
	and has less than 20% cover of aggressive, opportunistic plant species (see list of			
	species on p. 100).			
	At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-			
	grazed or un-mowed grassland.			
	The wetland is larger than $^{1}/_{10}$ ac (4350 ft <sup>2</sup> )			
	☐ Yes = Category I ☐ No = Category II			
SC 6.0. I	nterdunal Wetlands			
	Is the wetland west of the 1889 line (also called the Western Boundary of Upland			
	Ownership or WBUO)? If you answer yes you will still need to rate the wetland			
	based on its habitat functions.			
	In practical terms that means the following geographic areas:			
	Long Beach Peninsula: Lands west of SR 103			
	Grayland-Westport: Lands west of SR 105			
	Ocean Shores-Copalis: Lands west of SR 115 and SR 109			
	☐ Yes - Go to SC 6.1 ☑ No = Not an interdunal wetland for rating			
SC 6.1.	Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form			
	(rates H,H,H or H,H,M for the three aspects of function)?			
	□ Yes = Category I □ No - Go to SC 6.2			
SC 6.2.	Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?			
	□ Yes = Category II □ No - Go to SC 6.3			
SC 6.3.	Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and			
	1 ac?			
	☐ Yes = Category III ☐ No = Category IV			
	y of wetland based on Special Characteristics			
lit voll an	swered No for all types, enter "Not Applicable" on Summary Form			



# Notes: 1. As the wetland features only emergent and aquatic bed cowardin classes, question L1.2 can be seen on this figure.

- 2. The locations of all features shown are approximate.
- 3. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Aerial image from ESRI Data Online.

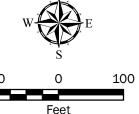
Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

# Wetland A

Aquatic Bed

Emergent

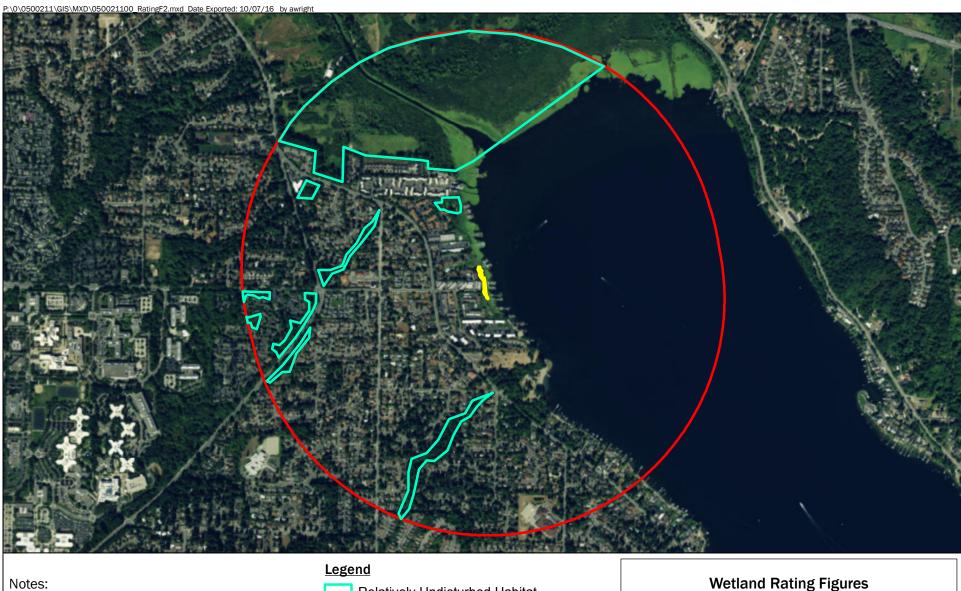
150 Foot Buffer 100



# **Wetland Rating Figures**

40th St NE Stormwater Trunk Line Extension Redmond, Washington





- 1. There is no accesible, relatively undisturbed habitat adjacent to the wetland. 2. The locations of all features shown are approximate.
- 3. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

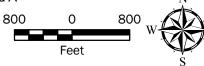
Data Source: Aerial image from ESRI Data Online.

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Relatively Undisturbed Habitat

1 KM Boundary

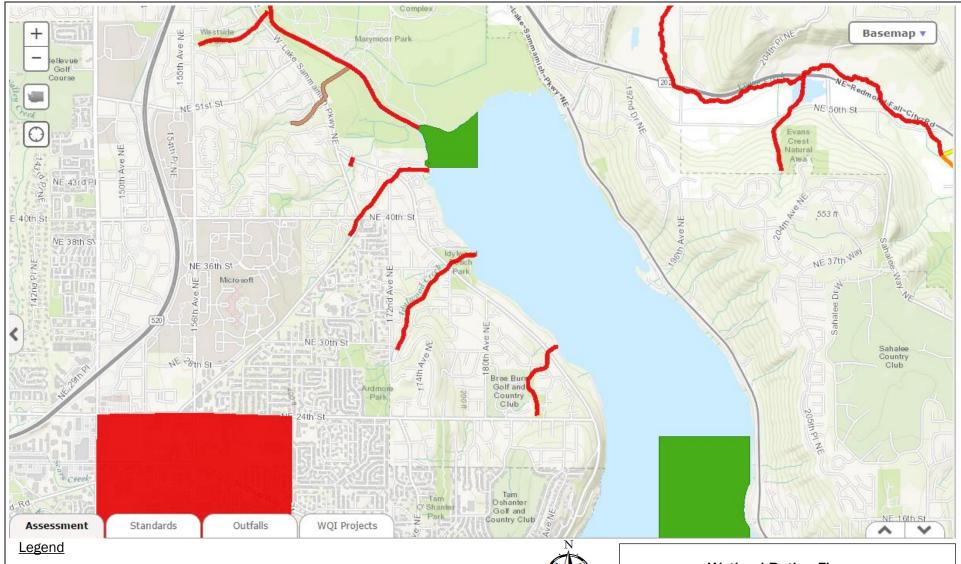
Wetland A



# Wetland Rating Figures

40th St NE Stormwater Trunk Line Extension Redmond, Washington





Not to Scale

#### Notes:

- 1. The locations of all features shown are approximate.
- 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: WA Department of Ecology

# **Wetland Rating Figures**

40th St NE Stormwater Trunk Line Extension Redmond, Washington



#### **WRIA 8: Cedar-Sammamish**

The following table lists overview information for water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (<u>WRIA</u>). Please use links (where available) for more information on a project.

#### Counties

- King
- Snohomish



Waterbody Name	Pollutants	Status**	TMDL Lead	
Ballinger Lake	Total Phosphorus	Approved by EPA	Tricia Shoblom 425-649-7288	
Bear-Evans Creek Basin	Fecal Coliform	Approved by EPA	Joan Nolan	
	Dissolved Oxygen Temperature	Approved by EPA	425-649-4425	
Cottage Lake	Total Phosphorus	Approved by EPA Has an implementation plan	<u>Tricia Shoblom</u> 425-649-7288	
Issaquah Creek Basin	Fecal Coliform	Approved by EPA	<u>Joan Nolan</u> 425-649-4425	
Little Bear Creek Tributaries: Trout Stream Great Dane Creek Cutthroat Creek	Fecal Coliform	Approved by EPA	Ralph Svricek 425-649-7036	
North Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svricek 425-649-7036	
Pipers Creek	Fecal Coliform	Approved by EPA	<u>Joan Nolan</u> 425-649-4425	
Sammamish River	Dissolved Oxygen Temperature	Field work starts summer 2015	Ralph Svrjcek 425-649-7036	
Swamp Creek	Fecal Coliform	Approved by EPA Has an implementation plan	Ralph Svricek 425-649-7036	

<sup>\*\*</sup> Status will be listed as one of the following: Approved by EPA, Under Development or Implementation

#### Notes

The locations of all features shown are approximate.

The locations of an returned shown are applications.
 This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: WA Department of Ecology

#### **Wetland Rating Figures**

40<sup>th</sup> St NE Stormwater Trunk Line Extension Redmond, Washington



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